—THE—

Therapeutic Gazette.

Whole Series, Vol. XI. | Detroit, July 15, 1887. | Third Series, Vol. III. No. 7.

CONTENTS.

Original Communications.

PAGE

Hygienic Therapeutics—A Lecture on the Methods and Applications of Kinesitherapy. By Professor Dujardin-Beaumetz 433
The Influence of Antifebrin, Salicylic Acid, and Carbolic Acid on Normal and Abnormal Bodily Temperature (continued). By H. A. Hare, M.D.. 444
Croupous Pneumonia of the Apex attended by a Unique Symptom. By Louis Starr, M.D. 451
Acute Cerebro-Spinal Meningitis. By Joseph X. Zitéke, M.D. 452
A Case of Chancroid successfully treated with Mercury. By C. L. Dodge, M.D. 458
Poisonous Symptoms from Nitro-Glycerin. By J. Noer, M.D. 459

Leading Articles.

The Iodoform Question 461
Antipyretics 462
Diarrhœa of Children 463
Gastric Ulcer 463
"Drumine" 463

Reports on Therapeutic Progress.

Carbolic Acid Poisoning from the Use of Carbolated Cotton with a Child 460
Calcium Gummophosphate 460
Treatment of Arterio-Sclerosis 460
An Experimental Study of the Effects of Puncture of the Heart in Cases of Chloroform-Narcosis 464
Stretching the Sphincter in Apoplexy ... 465
Composition of Cow's Milk 466
Some Points in the Selection and Administration of Anæsthetics 469

PAGE

Physiological Action of Remijia Ferruginea 466
Bergeon's Method of treating Phthisis . 467
The Treatment of Scrofulous Glands 468
Mollin 469
A New and Impervious Dressing 470
Mechanism of the Third Stage of Labor: the Separation and Expulsion of the Membranes 470
Acetone-Chloroform—a New Discovery. 471
Manipulation without Incision as a Possible Treatment in Certain Cases of Stone in the Kidney 472
Boracic Acid in the Treatment of Leucorrhœa 473
The String-Drain as a Supplement to the ordinary Drainage-Tube 473
A Speedy and sometimes Successful Method of treating Hay Fever 474
Salol 475
The Reparative Treatment of some of the Graver Forms of Vesico-Vaginal and Vesico-Uterine Fistulæ 475
Cure of a Cancroid of the Larynx by Extirpation through the Natural Passages 476
Rapidity of the Blood-Current in the Kidney and other Organs 477
Casein as an Emulsifier 478
Will the Knee-Jerk divide Typhoid Fever from Meningitis? 478
A New Operation for Hepatic Abscess .. 479
The Treatment of Typhoid Fever by Antipyrin and Thallin 479
The Treatment of the Dyspepsias of Infancy, and their Causation by Microbes 480
The Treatment of Lupus by Scraping ... 481
The Action of Hydrochlorate of Hyoscine 482
Extirpation of the Cricoid Cartilage for Enchondroma 483

PAGE

Sanitation of the Lying-in Chamber 483
The Treatment of Epistaxis 484
Fluorides of Ammonium and Iron in Hypertrophy of the Spleen 485
Antipyrin and Antifebrin in Headache and Epilepsy 485
The Use of Pilocarpine in Diseases of the Lungs 486
Pyridine Tricarboxylic Acid as an Antipyretic and Antizymotic 486
Subcutaneous Injection of Cocaine in Surgical Practice 487
Iodoform Inunction in Meningitis 488
A New Method of treating Local Tuberculosis 488

Reviews 489

Correspondence.

Paris Letter 495
Apomorphine in Croup 497
Santonin-Poisoning 497
"Local Numbness" 498
Antifebrin as an Antipyretic 499

Notes and Queries.

Croton Oil 499
Poisoning by Pilocarpine 500
A Chinese Anæsthetic 500
Experimental Neuritis 501
Guachamaca Toxifera 501
Antiseptic Midwifery 502
Posology and Use of some New Remedies 502
Momordica Bucha 503
Covering Wounds with Plaster 503
Ricinus Communis 503
The Latest Cure for Consumption 504
The Effects of Resorcin 504
Asthma treated by Bergeon's Method ... 504
Syrup of Saccharin 504

Original Communications.

*HYGIENIC THERAPEUTICS—A LECTURE ON THE METHODS AND APPLICATIONS OF KINESITHERAPY.**

By Professor Dujardin-Beaumetz, Paris, France.

GENTLEMEN:—In the last lecture we had under consideration the physiological effects which may be obtained from exercise and from movements. It now remains to see how far these physiological effects may be utilized in the treatment of diseases. But before undertaking this part of our subject, which is one of special interest, it seems to me desirable to explain, as briefly as possible, the procedures which may be put in usage to obtain these benefits; in other words, to set forth the methods of gymnastics.

When you take a general survey of these methods, you see that they may all be ranged in three categories. Some are performed without apparatus; others require the effective co-operation of a master,—this is Swedish gymnastics; others still demand the use of apparatus, whether fixed or free, or characterized by automatic movements.

Gymnastics without apparatus are divisible into two great groups,—home gymnastics,†

* From advance sheets. Abstract of two lectures delivered in Cochin Hospital.

† Gymnastique de chambre.

whose object is the promotion of suppleness of the frame, and gymnastics which belong to the natural exercises, such as the various attitudes, walking, leaping, etc.

The first kind, or home gymnastics, is of special utility in therapeutics. It consists in making different parts of the body, and particularly the limbs, execute numerous movements, which may be of great variety, and combined in a thousand ways. You will find in all the manuals of gymnastics, and, in particular, in the official manual published under the direction of the Minister of Public Instruction, a description of all these movements which constitute "elementary gymnastics," and which comprehend movements tending to give suppleness to the head, trunk, arms, and legs, and to the arms and legs together.

Schreiber has much insisted on this kind of gymnastics, and his works have had a great popularity in Germany, where his treatise on "Medical and Hygienic Home Gymnastics" has passed through fifteen editions. In the method of Schreiber the head and limbs are made to execute movements of circumduction more or less rapid. It has been said that these exercises, while giving good results, cannot take the place of gymnastics properly so called, because that in these simple "home" movements, whose object is to confer suppleness, the individual has no resistance to overcome, and the exercise involves no muscular labor. I cannot agree with this view. All movement demands muscular labor, and it is easy to understand that by these movements, which are so effective in giving pliancy, one may put in play almost all the muscular groups of the economy. Moreover, these home gymnastics have this advantage, that they can be performed in all places, in one's own room, almost without a teacher, and in accordance with the simple indications furnished by the physician.

Before taking up the study of natural exercises, such as walking, leaping, I must give you a definition of the words *position* and *attitude*. Position is compatible with a certain muscular relaxation, while attitude always demands some amount of muscular activity. Thus, standing is an attitude, while sitting and lying are positions. Every gymnastic movement, to have a determinate end, presupposes an initial and terminal attitude.

Walking is one of the most useful of gymnastic exercises. Marey, in his work, the fruit of his studies carried on at the physiological station of Parc des Princes, has laid down some excellent indications concerning certain points in walking. He has shown us that the quickness of one's gait increases in proportion as one diminishes the height of the heel of his boots. He has also shown us that when the sole of the boot exceeds the length of the foot by a certain figure, the paces are lengthened, and he has fixed at fifteen millimetres, this figure by which the sole ought to extend beyond the great toe. Lastly, he has shown us that when one walks with a rhythm of from sixty to eighty steps per minute, the length of those steps is increased.

In the case of infantry when on the march this walking rhythm is higher, the steps being quickened to one hundred and fifteen per minute. It has been affirmed that a man may walk eight kilometres and four hundred and fifty metres per hour. This estimate seems to me exaggerated, and I am more inclined to accept that furnished by Michel Levy, who maintains that an adult man in good health may, without overtaxing himself, walk ninety metres per minute, which would give five kilometres and four hundred metres per hour, and he ought to be able to keep this up for six hours.

We distinguish three rhythms in running, according to the number of steps taken per minute. In moderate running one hundred and forty are made; in rapid running, two hundred; some racers make as many as two hundred and forty. When you prescribe running exercises to your patients remember to enjoin that these running exercises shall be short, and intercalated between an initial and terminal walking exercise.

I have nothing in particular to say relative to leaping and dancing, and I come now to the second division of gymnastic exercises in general, those that are made with the assistance of a master, and constitute SWEDISH GYMNASTICS.

Swedish gymnastics consist in provoking the voluntary contraction of certain muscles, while the assistant opposes with the hand a certain amount of resistance. Here, then, the presence of a second party is indispensable in guiding or opposing the movements which are executed. Meding* has divided these movements into semi-passive and semi-active movements. In the first, the movements are performed with resistance on the part of the subject; in the second, with resistance on the part of the master.

You easily understand how, by combining in a thousand ways these double and syner-

* Meding, "On Medical Gymnastics." Paris, 1882.

getic movements, one may succeed in developing all the muscular groups of the economy; at the same time it is plain that this mode must always be limited in its applications, as each pupil or patient requires a gymnastic professor. It has, therefore, been abandoned for the most part in France as a part of general gymnastics; while, on the other hand, it is coming more and more into use as a mode of medical gymnastics, for it enables us to limit the gymnastic action to a particular muscular group; and Schenström,* who has been the chief promoter of Swedish gymnastics in Paris, has shown us all the advantages which may be obtained from these special exercises in a great number of affections.

Gymnastics with apparatus comprise a great number of varieties. Sometimes the apparatus is fixed, sometimes it is movable, sometimes elastic, sometimes moved automatically. At the head of gymnastics with apparatus I would place that kind of gymnastics which Pichery, who is the originator, has styled "*opposition gymnastics*," of which you may see numerous applications in our wards.†

Struck by the advantages which the method of Ling gives, Pichery conceived the idea of rendering this method of general applicability, by substituting for the professor who opposes the movements of the pupil a sort of *parlor gymnasticon*, with elastic cords and well-padded rings for the extremities, which tend to force back the members making traction to their original position. You readily see how easy it is to vary the different tractions made on these elastic cords, so as to put in play almost all the muscular groups of the economy.

These "opposition gymnastics" have the advantage of taking up little room and of being available anywhere. The apparatus can even be adapted to the bed of the patient, so as to enable him, although bedridden, to execute movements of the different members, and obtain all the exercise which his condition permits.

These "opposition gymnastics," then, constitute an excellent kind of medical gymnastics, which we can utilize in our hospital wards, and in some cases on a large scale, as you can see in the use which I have made of them in our female wards.

The gymnastic apparatus with pulley-weights is very much like those above described as "opposition gymnastics." Triat has constructed a very ingenious sort of cabinet, containing a series of weights, which are put in movement by means of elastic bands with handles, and the apparatus is arranged so as to exercise the different parts of the body. This apparatus is very useful for the purpose of home gymnastics, but is rather too high-priced and takes up too much room to be of general use.

You will not expect me to give a description of all the paraphernalia used in gymnastics, and which you will find described in the technical treatises on gymnastics. The most useful are the upright bars, or chest-bars, which render the shoulder-joints supple and expand the chest, the leg-weights to be used while in a sitting posture, the pulley-weights, which strengthen the arms and shoulders, the dumb-bells, the clubs, the swinging-rings, the horizontal bars, the inclined ladders which are climbed with the hands, the vaulting-horses, etc. There is an infinitude of these apparatuses designed to give variety to the exercises and render them more attractive, all of which you can see in any of our Paris gymnasia.

Lastly, I must not omit to mention that sort of mechanical gymnastic apparatus which goes by steam, and is the invention of Zander, of Stockholm. Many of you must have seen a number of these gymnastic machines at the Paris Exposition in 1879, in the Palace of Industry. There was, indeed, a large gymnasium building erected on Chaussée-d'Antin Street expressly for this kind of gymnastics, but it was soon closed for want of patronage, so little enthusiasm have we Frenchmen for these exercises.

Zander, in his method, had taken the Swedish system for his model, substituting for the "professor" certain automatic apparatuses endowed with variable movements. There are appliances for giving motion to the knees, others for giving a movement of rotation to the shoulder, others, still more complicated, for imparting a suppleness to the trunk. In a word, there are parts of the apparatus adapted for producing a multiplicity of movements, and bringing into play all the muscles. Some of these movements are active, some are passive.

This species of gymnastics, which bespeaks on the part of the founder much hard work and great ingenuity, is very popular in Stockholm, where it is applied to medical uses. Thousands of patients every year flock to that city for gymnastic treatment in the great establishment which Zander has built.

* Schenström, "Reflections on Physical Exercises and Bodily Movements." Paris, 1880.

† Pichery, "Gymnastique de l'Opposant," etc. Paris, 1871.

You will see, as we go on, that this kind of mechanical gymnastics has been applied to diseases of the heart, and Zander, Nycander, and a large number of German and Swedish physicians affirm that they can thereby cure these affections, at least in their initial period. I shall have to allude to this subject farther on.

Thus far we have considered gymnastics in their application singly to the treatment of diseases or to the development of the body. Ordinarily, however, they are associated with other hygienic means, such as massage, hydrotherapy, balneotherapy, and dieting. The aggregate of all these means, when they are directed towards a special end, bears the name of *training*, and just as in zootechnics we see man, by the application of these means to the equine race, create varieties of animals fit for such and such uses, and in particular for the race-courses, so also we may by a similar kind of training put individuals in the best possible conditions to attain a given end. Thus it is that we have precepts of training for the boxer, for the pugilist, which Bouchardat has so well studied, for the various exercises of sport, foot- and horse-racing, steeplechase, rowing, etc.

Training, which, in the case of horses, is but the gradual application of gymnastics in the most ancient and best known sense of the word, comprehends in man, besides the employment of graduated gymnastic exercises, a series of means which Bouchardat has classed under the seven following heads: 1. Evacuants; 2. Alimentation; 3. Care of the skin; 4. Pure air; 5. Moral influence; 6. Abstinence from venery; 7. Temperance.

The end to be obtained by putting in usage all these hygienic and therapeutic means is the following: To eliminate the liquids and solids which have become vitiated or detrimental to the harmony of the functions; to impress a new activity on nutrition; and to favor the development of organs towards a given end. Let us rapidly examine these different points.

As for purgatives, all trainers give them a place in their method. Bouchardat protests against this practice, and urges the suppression of drugs from this aggregate of hygienic means. You will see that when we come to apply training to the cure of certain affections, and in particular of obesity, we shall have to have recourse to the purgative treatment, which, moreover, is really indicated. Recall to your minds what I said in my first lecture concerning the physiological effects of exercise. I showed you that exercise augments the production of leucomaines, and as the most important channels for the excretion of these toxic alkaloids are the intestine and the kidney, you understand the utility of promoting the functions of both these emunctories. One of these indications is fulfilled by purgatives.

As for diet, trainers recommend little drink and a dry diet. You remember that I had something to say about this subject last year.

The end of this dry diet is to diminish, as much as possible, the weight of the intestinal mass, which is a dead and useless weight. In the horse, this system of dieting, which consists in giving nutritious azotized aliments in little bulk and but little drink, has for its effect to give these animals the *greyhound stomach* which characterizes them.

Trainers then recommend their subjects to eat the dark meats, such as beef, mutton, and game; they suppress the white meats, starches, and fats. Bouchardat does not approve of this proscription, and if he favors the exclusion from training diet of starchy substances, he insists upon the free use of fats, which seem to him essential.

The care of the skin plays a considerable part in the training, whether of man or of animals. In the latter, grooming, according to Sanson, has a quite special action. It promotes reflexly the vaso-motor circulation of the different viscera; and you cannot fail to have noticed the carefulness and the patience with which race-horses are rubbed and curried. In man the same practices ought to be put in usage, and it is a good plan after the sweats to which the subject under training is subjected, to give him a brisk and thorough rub down with a flesh-brush and with flannel, and to follow these frictions by massage with the hand well oiled with vaseline.

It is taken for granted that hydrotherapy plays a considerable rôle in the means put in use to promote actively the cutaneous functions, and I shall return to this topic in the lecture which I propose to devote to this hygienic agency.

I need but allude to the necessity of pure air, which is a very useful adjuvant, facilitating, as it does, the combustions of the economy; nor shall I stop to comment on moral influences, which always depress the organism when they are excessive; nor on venereal abuses, which have the same effect; nor on the necessity of temperance, which, unfortunately, is the part of training which is, as a rule, observed the least, especially among

the English. It is, in fact, a common thing to see the English jockeys and boxers give themselves to alcoholic abuses.

Such are the various phases of training, and you will see that the precepts here given, when applied to the treatment of a great number of diseases, and especially to polysarcia and diabetes, are attended with remarkable results. I have now completed the description of the great methods of gymnastics, and pass on to the application of these methods to the treatment of diseases.

THE APPLICATIONS OF KINESITHERAPY.

We have seen that gymnastics modify respiration, circulation, innervation, digestion, and nutrition. We will now consider the benefits which may be derived from the methodical application of gymnastics in the different diseases of the systems and organs which subserve these functions.

Respiration plays a preponderant rôle in gymnastics, and it was Dally who thirty years ago said that respiration was the pivot of every gymnastic exercise. Authorities have even founded an aggregate of exercises to which has been given the name of respiratory gymnastics.

Dally recommends inspiration by the nose and expiration by the mouth.

Guye, of Amsterdam, maintains that both parts of respiration should be performed by the nose, and that neither inspiration nor expiration should be performed by the mouth. He considers respiration by the mouth as extremely injurious, and quotes with approval the saying of the American traveller, Catlin, —"If you will breathe with your mouth shut, you will prolong your life." Guye even insists that children should be habituated from infancy to breathing through the nose, though this necessitates closing the mouth by a special chin-piece, such as Delstanche has devised.

All this goes to show that there is nothing new under the sun, since it recalls to one's mind the method of Demosthenes, who used to put pebbles in his mouth and walk rapidly, thus carrying out the principles so many centuries afterwards laid down by Guye and Delstanche. Foreign bodies in the mouth prevent respiration by the buccal cavity, and compel respiration by the nose. Demosthenes, in adopting this practice, may not have improved his manner of speaking, but he certainly would augment his respiratory capacity in forming the habit of taking full breaths, which constitutes for the orator as well as for the singer a point of the greatest importance.

In the previous lecture I told you that among the methods of gymnastics singing and chanting have a prominent place, and that a great many professors of gymnastics insist on the necessity of concert-singing while the pupils perform their exercises.

Dally, in his special treatise "On the Methodical Exercise of Respiration," has well described the different movements applicable to respiratory gymnastics. These exercises are four in number.*

In the performance of the first exercise, Dally places the patient in a vertical attitude, with the back against a wall, then both arms and hands being extended horizontally in front, the patient forcibly and slowly separates the fingers while he bends the thorax forward; he remains in this position thirty seconds, makes a deep nasal inspiration, and resumes the initial position, then makes a deep expiration, and repeats this exercise six times in succession.

In the second exercise the arms are dropped by the side of the body, then brought forward, the fingers on the stretch, and slowly raised to a vertical position above the head with the palms down, then brought back in front, when a deep inspiration is taken. The arms are then slowly let fall upon the sides of the trunk, with the palms upward.

The third exercise consists in executing with the arms two double lateral circles, from behind forward, from below upward; the circles should be made with a full sweep, and care should be taken to bend the body forward every time that the arms are thrown backward, and never to hit the loins. This movement ought to take place almost entirely in the scapulo-humeral articulations. Inspiration whenever the arm is raised, expiration when it is lowered.

The fourth exercise consists in alternate flexion and extension of the trunk, the arms being crossed.

But there is another and simpler exercise which will render you much service in developing respiratory capacity, viz.: to make the patient count with a loud voice as long as he can do so without losing his breath. Before commencing to count, the patient should make a deep nasal inspiration. You can even

* Dally, "On the Methodical Exercise of Respiration in its Relations to Gymnastic Conformation and the Health in General." (*Bull. de Thèr.*, 1881, t. ci. p. 197.)

by the aid of this process calculate the respiratory capacity of the chest, for with the ordinary thoracic capacity one ought to count as far as fifty or sixty without losing breath.

I do not here need to describe the different types of respiration; they are, as you know, of three kinds: the abdominal type, due to the fall of the diaphragm; the costo-inferior type, produced by the elevation of the inferior ribs, which project anteriorly beyond the xiphoid appendix; the costo-superior or clavicular type, due to the rising of the clavicle. According to Dally, the largest quantity of air which can be made to penetrate the lungs is obtained by the nasal costo-superior inspiration; he recommends also to contract the abdominal muscles at this period of respiration. Respiratory gymnastic exercises, in augmenting the force of expiration, attain the same results.

Such respiratory gymnastics will render you great service in all diseases where there is a special indication to augment the pulmonary capacity. At the head of these diseases we must place pleurisy, or rather the sequelæ of pleurisy; pleuritic adhesions consecutive to effusions diminish the thorax of the affected side, and to such a degree that the patient generally bears for life the marks of the disease. By the practice of these respiratory gymnastics you will often succeed in causing this thoracic deformity to disappear.

Empyema has the same consequences, and here respiratory exercises will render you the same service; for my part I always have recourse to them. By these forced respirations and the chest-development which follows you will often break up pleuritic adhesions binding the lung to the vertebral column, and you will thus forward the coming together of the costal parietes and lungs, and the formation of those adhesions between the two surfaces which are so essential to the cure. In pulmonary emphysema, where, by reason of the damaged condition of the air-cells, the patient sees his pulmonary capacity diminishing from day to day, you can do much to obviate the inconveniences resulting therefrom by respiratory gymnastics.

As Basil Ferris has well shown, it is the expiratory act which is the most enfeebled in emphysema, and therefore he has proposed to make up for this deficiency by an elastic respirator, which I have described in my "New Medications" (Am. ed., p. 133).

Of late years all authorities who have written on gymnastics have insisted on the application of kinesitherapy to the prophylactic treatment of pulmonary phthisis,—*i.e.*, before any morbid manifestation has appeared on the part of the lungs. To demonstrate the advantages of this kind of treatment, the following points have been emphasized:

First, our attention has been called to the narrowness of the chest in persons predisposed to tuberculosis. Fourmantin, in his treatise on the "Deformities of the Thorax," has shown that the thoracic index in tuberculous subjects is always very high, and varies between 133 and 152, while, on the other hand, in the normal state it ought always to be below 128; moreover, it is the rule, from a clinical point of view, to consider narrowness of the chest as favorable to the development of tuberculosis.

It has also been remarked that in tuberculous patients there is not only narrowness of the chest, but atrophy of the respiratory muscles. One of my most promising pupils, Dr. Stackler, has shown, in some researches made in my service, that contractility is always lessened in the pectoral muscles corresponding to the side of the chest the most affected.

It is easy to understand how gymnastic exercises may remedy this muscular atrophy and this narrowness of the chest by increasing the muscular force and respiratory capacity.

Burq has made plain by figures the favorable influence of these respiratory gymnastics on tuberculosis, by showing that persons who exercise their lungs are less likely to contract phthisis than other persons. Thus it is that, from statistics covering a period of twenty-six years, Burq has shown that the military musicians of Paris and of Versailles furnish three times as few phthisical patients as the other soldiers. Lastly (and here I continue citing only writings of recent date), Lagneau, in his successive communications on the measures of hygiene most suitable for lessening the frequency of phthisis, shows the influence of a sedentary life on the diminution of function of the respiratory organs, and, according to his researches, an inactive in-door life is one of the most favorable conditions for tuberculosis.

All these data, which were published before Koch's discovery, I believe to be still exact and reliable.

The question of a *suitable soil* remains always predominant, and if we are all continually exposed to the ravages of the bacilli and yet resist their incursions, it is because our organisms struggle to advantage against influences tending to destroy them. Gymnastic exercise is one of the most useful

agents for maintaining our forces in perfect equilibrium; hence, as viewed from this important side of the question, gymnastics must ever be called upon to render service in tuberculosis.

But this is not all; in these very data we find grounds on which to base our affirmation of the utility of these corporal exercises. You know that it is on these facts of bacteriology that we to-day base the generic union of scrofula with tuberculosis, and if clinical experience still finds clear-cut differences between them, pathological anatomy and bacteriology agree in confounding scrofula and tuberculosis in one and the same diathesis.

Now, in regard to scrofula, gymnastics constitute one of the most effectual curative means, by favoring the operations of hæmatosis, by augmenting the respiratory functions, by regulating the development of the body and improving nutrition.

If gymnastics may render us great service in the prophylactic treatment of tuberculosis, one should be very chary in their employ when the tuberculous lesions have attained a certain stage; you know well, in fact, that everything which congests the thoracic organs also augments the gravity of pulmonary accidents, and is especially likely to cause hæmoptysis.

Do not forget, also, that overwork and over-fatigue debilitate the organism, and thus make it a suitable culture soil for the microbes of tubercle. You should therefore enjoin on the tuberculously predisposed a certain moderation, variable according to the subjects, in the use of physical exercises.

The action of bodily exercises on the circulation gives scientific warrant for the application of these gymnastics, on the one hand to the treatment of diseases of the heart, on the other to the treatment of anæmia. If on the first point there is not unanimous agreement, this is not the case with respect to anæmia. Everybody, in fact, admits the happy influence of gymnastics in the therapy of anæmias, and in particular of chlorosis, and this, through the augmentation of the pulmonary capacity and the increased activity of the cardiac pulsations occasioned by these exercises.

You know that every respiratory act, by bringing a greater quantity of blood in contact with the oxygen of the air, promotes the gaseous excharges and directly enhances the functions of the blood-globule. To this immediate action on the blood-globule are joined the direct effects on nutrition; the appetite is quickened, the muscular strength augmented; and thus you understand the manifold benefits obtainable from gymnastics in the treatment of anæmia. In this category of exercises must be included walks in the open air, mountain excursions, swimming, horseback-riding, and all the feats of gymnastics which are not too severe and too exhausting.

It was in Germany that the idea originated of applying to the treatment of diseases of the heart, and in particular of fatty degenerations of this organ, corporal exercises and fatiguing tasks. Œrtel, and his pupil Schweninger, have been the most earnest advocates of this method. They contend that by corporal exercises you excite the fibrillary contraction of the cardiac muscle, and thus augment the contractile power of the heart, which manifests itself by increase of the arterial tension. Moreover, the augmentation of the pulmonary capacity clears the lungs, combats cyanosis, and facilitates the contraction of the right ventricle.

Therefore these German authorities recommend two sorts of exercises,—walking on level ground, and, first and foremost, mountain-climbing. In subjecting himself to this latter exercise, the cardiac patient undergoes a real gymnastic training proportioned to his forces, a training which enables him every day to increase the distance to which he can climb. You see to-day this method applied in the Tyrol and in a great number of Alpine stations. Benches arranged at places here and there, and at variable heights, indicate the length of the ascent which the patient with heart-disease is expected to make every day.

Other medical authorities have gone even further, and if Schol, of Frankfort, limits the exercises imposed on cardiac patients to the practice of the Swedish method, Classen prescribes real gymnastic movements, and would have these patients engage in all the corporal exercises of the gymnasia. Sommerbrodt and Heiligenthal approve also the method of Œrtel, and all these authorities are agreed in pushing the exercise, whether it be walking, climbing, gymnastics, till the cardiac patient experiences some degree of breathlessness and dyspnœa.

What is the therapeutic value of these procedures? To decide this question, we must review the physiological action of corporal exercises on the muscular structure of the heart.

You remember that in the last lecture I had something to say about over-fatigue of the heart, and the theories which have been

broached to explain the state of the heart after too exhausting labors. Whether you adopt the hypothesis of primary hypertrophy, or that of myocarditis, or even that of the toxic effect of leucomaines, the result is always the same,—that is, these fatigues lead to the arythmia of dilatation of the heart, and finally to asystolia. All writers who have studied overstrain of the heart are unanimous in this regard, and you will find in the descriptions of Peacock and Albutt in England, of Seitz, Frantzel, Otto, Hahn, Curshmann, and Leyden in Germany, and of Daga and Coustan in France, an almost absolute clinical identity as regards the symptoms of overstrain of the heart.

Having settled these facts, let us see what takes place when we attempt to apply corporal exercises to diseases of the heart. Whatever may be the cardiac affection which you are endeavoring to combat, whether it be alteration of the orifices or of the myocardium, the heart, in endeavoring to overcome its obstacles, tends always to undergo hypertrophy and degeneration. For if the heart, by the histological constitution of its muscular fibres, is a muscle similar to the muscles of animal life, it differs from these by the dominant fact that it is never at rest, and that you can never assign inaction as a cause of atrophy of this muscle, as you can of other muscles.

What, then, do corporal exercises effect? They increase the contractions of the heart, and favor its hypertrophy and degeneration. This result may be favorable in the period of compensation, but it is unfavorable in that of degeneration; and, as the one fatally entails the other, our conclusion is this, that extreme caution and prudence should be used in the employment of these hygienic means, and that if it is a good thing to exercise the heart within reasonable limits, there is always danger of exhausting that organ.

Hence all the tact and judgment of the experienced physician are brought into practice when it is a question of prescribing corporal exercises to patients affected with heart-disease, and such patients should be counselled to begin moderately, and increase little by little every day the amount of exercise which they can well bear. The Swedish gymnastics, graduated walks, ascents made in a methodical and progressive manner, may render you some service, but you should always watch your patient, and examine the results of these exercises on the heart and general circulation.

I have little to say respecting the application of gymnastics to the troubles of digestion. I ought to recall to your minds, however, that these exercises augment the digestive functions. Kinesitherapy is applicable to the treatment of anorexia and dyspepsia, and one has only to test in order to verify the saying of Chomel, "A man digests with his legs as well as with his stomach."

But there is another point which I desire to emphasize, viz., the treatment of constipation by gymnastics, and, in particular, by abdominal gymnastics. In fact, just as we have seen described certain kinds of respiratory gymnastics, so also there is an aggregate of movements and of exercises to which has been given the name of abdominal gymnastics.

It is for the most part the Swedish physicians who have interested themselves in these abdominal gymnastics, and Nycander, of Stockholm, has given us a complete description of these exercises, which really appertain much more to massage than to gymnastics. These consist in passes, pressures, tappings, and shocks of the abdomen, of which I shall say more in the next lecture, when I come to speak of massage.

There are, however, other exercises of a purely gymnastic nature which very happily combat constipation, and augment in notable proportions the tonicity of the abdominal muscles. These exercises are of two orders. One kind consists in flexions of the trunk, the subject being either standing or sitting, the other in movements of elevation of the arms. In directing flexions of the body, you may to advantage prescribe the opposition gymnastics above described. The patient sits on a chair with his feet braced against a stool, then grasps with his hands the padded handles; then, with arms extended, executes a series of tractions and relaxations, which compress the abdomen.

To impart increased tonicity to the abdominal muscles, and especially to the rectus, whose relaxation is one of the causes of that obesity which Brillat-Savarin has characterized by the word *gastrophorous* (big-bellied), where you have a plump abdomen and relatively slender limbs, you can make use of Dally's *wall exercise*, which consists in standing a patient against a wall, making him bring his arms up stiffly above his head, then swing them back and forth describing a half-circle.

I come now to the application of gymnastics to muscular disorders. I have told you that gymnastics augment the volume of the muscles and regulate their contractions, hence

these exercises have been found of utility in three kinds of muscular affections,—atrophies, contractures, and chorea.

There is no better treatment of muscular atrophy, from whatever cause originating, than gymnastics, and here we witness the triumph of the Swedish Movement Cure, which enables us to limit the exercise to a given muscular group. You readily understand the service which this species of gymnastics may render in such cases. These muscular atrophies produce also those bony or articular deformities of the skeleton, the treatment of which occupies an important department of infantile surgery,—orthopedics. In these deformities nothing more conduces towards a cure than the practice of gymnastics. To accomplish this result numerous means have been proposed. Some have advised the use of mechanical appliances, more or less complex, for the correction of these deformities, and all sorts of methods have had their day, from Andry's Orthopedic Cure to that of Scarpa. At a later period we have seen the prevalence of Jules Guerin's method of tenotomy, which was long so popular among surgeons. Lastly, we come down to the modern period, when, under the influence of Bouvier, Bouland, of Dally, and of Pravaz, surgeons have studied with greater care the causes of these deformities, and have endeavored to indicate the treatment for each.

I need not recall to your minds the meaning of the words *kyphosis*, *lordosis*, and *scoliosis*.

You know that the first of these deformities is characterized by curvature of the vertebral column, with convexity posterior, while in lordosis the convexity is anterior, and in scoliosis the curvature is lateral.

In all these malformations gymnastics render an important service, but they should be directed by the best medical judgment. Care should be taken that the compensatory curvatures shall not augment the deformity already existing. It is, then, always under the eye of a skilful and experienced physician that such exercises should be undertaken.

Bear in mind that in the case of kyphosis, as well as of lordosis, the efficient cause, in the majority of cases, is tuberculous softening of the vertebræ, in consequence of which the vertebral column presents so feeble a resistance as to give way under strains and lead to grave consequences.

You should, then, wait before attempting gymnastic movements in such cases, and before neglecting the use of such fixation apparatuses as Bonnet's troughs, or the plaster of Paris bandage, till cicatrization and the new ossification of the vertebral column shall allow you to interfere without danger. But there are deformities like scoliosis, and the spinal distortions so well described by Dally, which are quite amenable to gymnastic treatment.

Among the exercises which you can prescribe to your patients in order to promote straightening of the head and trunk, there is one mentioned by Tissot which deserves to find a place here on account of its simplicity. Tissot mentions the fact of a boarding-school mistress who, in order to compel her pupil boarders to walk erect, made them carry on their heads a light object of rather unstable equilibrium (such as a brick or piece of wood), and obliged them to walk and to run without letting this object fall.

This is, I think, a practice which might often be employed to advantage, for you must often, like myself, have noticed that in countries where women have the habit of carrying milk-pails and other burdens on their heads, they are distinguished for their portly, supple, and erect forms.

Swedish gymnastics and opposition gymnastics have considerable utility in the treatment of these deformities. To the muscular inequalities, which are the efficient cause of these deformities of the skeleton, must be opposed an inequality of efforts, so as to exercise the atrophied muscles, and immobolize the muscular group which, by its preponderance of action, has entailed the deformity of the skeleton. This result is attained by the resistance movements. For further particulars as to the orthopedic treatment of these deformities I must refer you to the works which have been published on this subject, and which are now quite numerous, such as, especially, those of Bouvier, of Malgaigne, of Dally, of Saint-Germain, of Leblond, etc.

Gymnastic exercise is quite as efficacious in the treatment of certain convulsive affections, and, in particular, of chorea. Since the introduction of gymnastic exercise into the hospitals, we have seen it applied to the treatment of chorea, and with striking success. Blache has given us the most complete particulars in this regard, showing us, in 1854, that out of one hundred and fifty-eight cases of chorea, one hundred and two recovered in thirty-nine days, and six in one hundred and twenty days under gymnastics associated with sulphur-baths. All previous and subsequent observers are unanimous in recognizing the good effects of gymnastics in this disease, and authorities

such as Germain Sée, Becquerel, Parrot, and Jules Simon are earnest advocates of the movement cure of chorea. What kind of bodily movements are likely to be of most benefit in this disease? Laisné, who has carried out this treatment under the direction of Blache, has furnished us the most precise indications in this regard, and his studies in this department have since been completed by Pichery, Leblond, Heiser, and others. These gymnastic applications vary according to the period of the disease and its intensity.

In the grave choreas, especially in those of paralytic form, only massage is practised; then, at a less intense period, the child is made to execute passive movements, affecting principally the parts where the choreic movements are most pronounced. These passive movements consist in delicately seizing the choreic member, and making it execute rhythmical movements, at the same time compelling the little patient to count in a loud tone of voice in concert with the preceptor. In exercises of this kind there is demanded on the part of the preceptor a great deal of patience and no little skill to keep from struggling with the little patient and yielding to his convulsive movements. When these movements are still less intense, you can make the child perform some exercises on the "orthopedic ladder." Lastly, when the incoordination becomes still less, you may have the child execute movements of a decidedly rhythmical character, and here chanting, by giving a cadence to these movements, has a real utility.

To sum up. Extreme skill and prudence are required in the employment of gymnastics in the treatment of chorea, and an experienced physician or a master of gymnastics ought always to direct them.

The application of gymnastics to chorea leads me to speak of the gymnastic treatment of affections of the nervous system in general.

I have told you that without adopting the exclusive opinion of DuBois-Reymond, who sees in gymnastics only an exercise of the cerebro-spinal system, I am inclined to regard gymnastics as promotive of equilibrium between the functions of the brain and spinal cord. Therefore to all nervous, ataxic, neurasthenic persons, a class of patients so numerous in our large cities, to all those who are broken down by severe mental work, to all who by reason of being entirely devoted to sedentary official duties give little or no time to the exercises of the body, gymnastics are not only useful but a necessity.

It is not enough to know that in such cases gymnastics may give marvellous results, you must also be able to apply them, and here you will meet with difficulties. If your patient is a man, the thing is easy enough; and if some of our patients object to going to the gymnasium, almost all are willing to try boxing and fencing. But where the question presents greater difficulty is in the case of female patients. All naturally object to gymnastics properly so called, and you hardly like to propose, or they to accept, fencing as an exercise. As for horseback riding, this kind of exercise is quite popular among our neighbors across the Channel, but it is repugnant to our French ladies. Horseback-riding, from a gymnastic point of view, is an exercise which develops unequally the muscles of the organism, but which, at the same time, presents the great advantage of requiring early rising on the part of the patient and rides in the open air. Unfortunately, this is an exercise which only those in somewhat affluent circumstances can afford. As for the middle and poorer classes, you will have to be content to order long walks, especially in the open country, mountain excursions, and sports, such as lawn-tennis and croquet. All your knowledge and judgment will be demanded in ordering exercises appropriate to the position in life and the situation of the patient who consults you.

We now pass on to the application of gymnastics to the treatment of hysteria.

Are gymnastics capable of curing hysteria? I cannot say yes to this question. I believe there are even cases of hysteria where gymnastics are more detrimental than useful. At the same time there are other cases where this multiform neurosis may be usefully modified by kinesitherapy, especially if you combine hydrotherapy with it. Muscular fatigue, in fact, often enables these patients (if I may use the expression) to *discharge* their nervous systems,—to work off their surplus of force, and under these two hygienic means, physical exercise and hydrotherapy, we see sleep supervene and the nervous phenomena calmed. I have had a little experience in this kind of treatment, having been enabled for more than a year, owing to the kindness of Pichery, to try his opposition gymnastics on a great many female patients in my wards.

You must, like myself, have been often impressed by the fact that while all, or nearly all, our patients are men who have led active lives, demanding a considerable and often

excessive expenditure of muscular forces, our female patients, on the other hand, are persons who have pursued sedentary occupations, which, whether carried on sitting or standing, do not demand much labor on the part of the muscles. Hence we see a series of morbid phenomena resulting from these habits of inactivity, phenomena which we may very happily combat by gymnastics. It is even to be desired that these gymnastic exercises should be more generally adopted in our hospitals, and that we may be enabled to give our poor patients the benefit of this salutary association of hydrotherapy and corporal exercises.

If the multiple nervous states connected with hysteria are tributary to treatment by gymnastics, there is another neurosis quite as grave, or even more so, namely, epilepsy, in which great moderation is requisite in the use of gymnastics. To the epileptic, horseback-riding and swimming are absolutely interdicted; a fit during these exercises might result in death. It is the same with all the exercises of the gymnasium performed with apparatus. You can, however, make free use of those kinds of gymnastics which give suppleness, and which I have called "*gymnastique d'assouplissement.*" At the Salpêtrière, all the young epileptics are made to perform these exercises of suppleness, and very good results are obtained therefrom, both from the point of view of physical development and the prolongation of the interval between the fits. Do not forget that walking, as well as gardening and farm-work, have a favorable influence in the treatment of this disease.

In idiocy, which is sometimes found associated with epilepsy, gymnastics have a favorable influence. In the case of these forlorn, pitiable beings, who have an instinctive prompting to locomotion, which they manifest by disordered and aimless movements, gymnastics regulate these movements, habituate the child to obedience, lessen the tendencies to masturbation, and tend in a certain measure to develop intelligence. Hence all authorities who have had to do with the education of idiots—Esquirol, Belhomme, Delasiauve, Voisin, Bourneville—have remarked the beneficial effects of gymnastics in the training of these unfortunates, and you can see at Bicêtre, in the idiot department, the brilliant results obtained by Pichery from gymnastics. Here it is movements of an exact, rhythmical character—movements in concert, accompanied by singing—which seem to give the best results.

But I have told you that it is chiefly by their general action on nutrition that gymnastics take a preponderant place in the treatment of diseases. In exciting the organic combustions by the increase of the respiratory capacity, in energizing the muscular and inter-molecular oxidations, in favoring the vitality of the cell, gymnastic exercise is perhaps the most powerful modifier of nutrition. Hence in all diseases where nutrition is compromised you will find that kinesitherapy operates favorably.

There are three diseases where nutrition is especially at fault: obesity, the uric diathesis and gout, and diabetes. In the treatment of these three diseases exercise plays a preponderant part. As for obesity, I have already in former lectures shown you what sort of hygienic rules the corpulent should follow, and in this hygiene I have given a place to exercises and massage. To this point, then, I need not return. Here it is especially to training practices that you must resort, and a rigorous system of training is more beneficial than any other kind of treatment. I must also remind you of the utility of abdominal gymnastics, and of such movements above described as "wall exercises," in the case of individuals who, without being absolutely polysarcic, have the abdomen a little too prominent (the big-bellied men of Brillat-Savarin). This condition results from a flabby, toneless state of the abdominal muscles, which you may often signally remedy by the exercises which I have just pointed out.

In the uric diathesis and in gout exercise is indispensable, and this is a fact known from all antiquity. Under exercise the waste matters of the organic combustions are better got rid of, and uric acid tends to disappear.

I cannot go back to this question of urea and uric acid, which we treated quite fully last year while on the subject of diet in gout. It is enough for me to remind you that the production of uric acid, whatever view we may take of its origin, is in direct relation with a slowing of nutrition in general, and this is combated by exercise, which has an opposite effect. Interrogate most of your gouty patients and you will find that the larger part of them err by want of exercise.

Besides the phenomena of combustion, corporal exercises promote perspiration in gouty patients, and this is salutary because, the cutaneous surface being vicarious with the kidneys, urea and uric acid are eliminated by this excretory channel; but these exercises must not be carried too far. Scudamore long since showed us that often attacks of ne-

phritic colic or of gout supervene in gouty subjects after fatiguing tasks, such, for instance, as too prolonged devotion to the pleasures of the chase, and Lécorché has cited facts of this kind. You must, then, insist on daily exercise in moderate amount, and in proportion to the state of your patient's forces.

Salmouth has even claimed that by forced marches one may arrest an attack of gout in its incipiency. Unfortunately, this is not so, and when once an attack is begun, even passive exercises must be forbidden. When deformity of the limbs or muscular atrophy has rendered walking impossible, it is not even then necessary to abandon exercise, and you will see in the next lecture that massage will render you excellent service; you can also at this period recommend horseback- or carriage-riding.

Besides nepritic colic, the gouty subject is liable to biliary colic. In biliary lithiasis gymnastics are useful; they favor the combustion of cholesterine, the basis of calculi, by the activity which they give to the organic exchanges. At other times when limited to abdominal gymnastics, such exercise facilitates the flow of bile and prevents its stagnation, and this of itself is a matter of no small moment.

Lastly, in diabetes the action of gymnastics, as Bouchardat has shown, is of the first importance, and constitutes, with dieting, the basis of the hygienic regimen of this disease. Corporal exercises augment the combustions without increasing the proportion of urea, diminish the quantity of sugar, and favor the functions of the skin. Here, as in polysarca, the general rules of training must be followed, caution being taken not unduly to fatigue the patient.

Recall to mind that spirited and charming volume of Cyr, entitled "The Impressions and Adventures of a Diabetic" (Paris, 1881). Cyr's diabetic patient travels over the different countries of Europe, and in each metropolis where he stops he consults some physician eminent in the treatment of diabetes. In Paris he applies to a certain Prof. P. (he should have said Prof. B., for he has given an exact picture of my venerated master Bouchardat), and under the title of an "original consultation" Cyr gives the routine of daily exercises and the bill of fare prescribed for his patient for one week. The exercises were to consist in digging the earth and removing the soil with a wheelbarrow, in marching with a company of infantry, in several times making the ascent of the towers of Notre Dame, and in walking around Paris by the boulevards in the suburbs, etc. While making due allowance for the imagination of the romancer, it must be admitted that there is a good deal of common sense in the hygienic prescriptions there laid down, and that it is a good thing to order exercise under all its forms to the diabetic.

Only you must bear in mind that diabetics are generally aged persons, and they have neither the courage nor the energy of one of our recent chemists, whose death France deplores, and who, when attacked with diabetes, became one of the noted gymnasts of the day. The greater part of these patients refuse to go to the gymnasium. In such cases, besides fencing, which is sometimes acceptable, and long walks, I cannot too much recommend gardening and joinery. Nothing, in fact, can be better than garden-work; besides labor in the open air, the patient in digging, weeding, raking his garden, executes numerous muscular movements which cause fatigue and sweating; but all diabetics, unfortunately, do not possess gardens. To such persons I can earnestly recommend the use of tools and joiner-work; the patient may, at a little expense, provide himself with a little workshop and a set of tools, and he will be likely to take a lively interest in the fabrication of objects which with a little practice he can learn to make, and he will find his muscular forces greatly increased thereby; therefore I would say to diabetic patients, if you have any natural mechanical ingenuity, apply yourselves to these healthful tasks.

Such are the principal applications of gymnastics to the treatment of diseases. In the next lecture I shall take up a subject which has many points in common with gymnastics, namely, massage.

THE INFLUENCE OF ANTIFEBRIN, SALICYLIC ACID, AND CARBOLIC ACID ON NORMAL AND ABNORMAL BODILY TEMPERATURE.

By H. A. Hare, M.D. (Univ. of Pa.).*

(Continued from page 389.)

II. Salicylic Acid.

In ten experiments as to the influence of salicylic acid on the normal rectal temperature of the rabbit, the following results were

* Demonstrator of Experimental Therapeutics and Instructor in Physical Diagnosis in the University of Pennsylvania.

obtained: In six experiments there was quite a marked fall of bodily temperature. In two others it rose slightly, while in the remaining two there was no change of any moment whatsoever. The writer is unable to give any explanation of these somewhat varying results, although one of them may be possibly explained by the struggling which took place when the animal was picked up. It may be, too, that in the remaining experiments the drug failed to reach the general system owing to delayed absorption, since, although an endeavor was made to place the hypodermic needle in the same region in each animal, it is perfectly possible that in one or two instances the drug may have entered in a spot where absorption went on slowly. That the drug does reduce normal bodily temperature seems proven not only by the majority of these experiments, but also by the results which were obtained in the experiments on the circulation and temperature in the dog. Thus we find on looking at the charts that in all five experiments on the normal animal when attached to the manometer there was a very marked fall in the temperature of the body.

These results are directly opposed to those obtained by Prof. Sée* and Fürbringer,† the first of whom used enormous doses, as much as 150 grains for a man, without finding any change in his temperature.

Prof. Sée gave the drug by the stomach, and, as Kohler has proved that the same investigator's experiments on the action of this drug on the circulation were made before the drug was absorbed, the same fallacy may exist here.

Gedl,‡ who gave man doses varying from 46 to 78 grains, found that in two cases there was no result, in three a lessening in the daily alterations in temperature, in three a slight fall of temperature, and in one a decided fall of 0.8° C.

Danilewsky states that the effects of the drug are slight and inconstant, while Mr. North§ found that the acid prevented very powerfully the rise of temperature following severe exercise.

* *Bulletin de l'Acad. de Méd.*, 1877, p. 697.
† *Zur Wirkung des Salicylsaure.* Jena, 1875.
‡ *Centralblatt f. Med. Wissensch.*, 1876, p. 403.
§ *Practitioner*, xxiii. 184.

Notwithstanding the somewhat contradictory results obtained by these experiments, I think the bulk of evidence points to a reduction of normal temperature under the influence of this drug, and that there is no doubt but that salicylic acid in very large doses decreases temperature very greatly.

I report the following experiments in detail:

Experiment 1.—Rabbit; weight, 2 pounds. Black doe.

Time. P.M.	Drug.	Rec. temp.	Remarks.
12.25	.....	102⅘°	
12.30	1 gr.	.....	
12.55	.....	102°	
1.15	.....	101⅘°	Animal huddles closely to the other, and apparently feels cold.
1.35	.....	102°	
1.55	.....	101⅗°	
2.15	.....	102°	
2 35	.....	102⅕°	
3.35	.....	102⅘°	Fall of temperature = 1⅕° F.

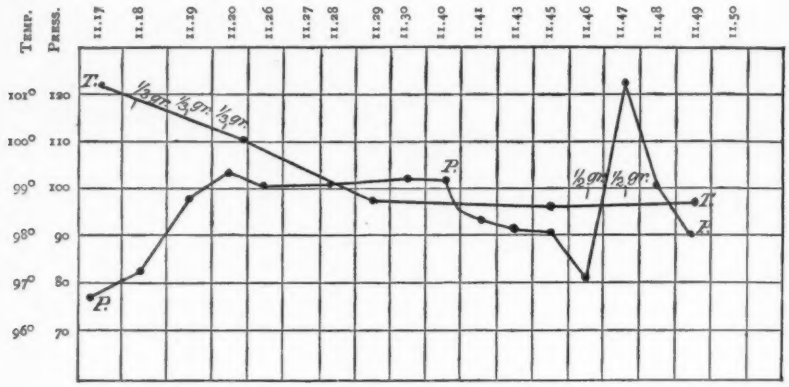
Experiment 2.—Rabbit; weight, 2 pounds. White doe.

Time. P.M.	Drug.	Rec. temp.	Remarks.
3.40	.....	103⅘°	
3.45	1 gr.	.....	Quiet.
4.05	.....	103°	
4.25	.....	102°	
5.25	.....	101⅗°	
5.45	.....	102⅘°	
6.05	.....	103⅕°	
6.25	.....	103⅛°	
6.45	.....	103⅗°	Fall of temperature 2⅕° F.

Passing on to a consideration of the action of this acid on the circulation under normal conditions and in fever (ten experiments), we find that there seems to exist no relationship between arterial pressure and the temperature, and that under both conditions the drug causes a rise rather than a fall of pressure. On the abnormal or pyretic temperature salicylic acid in moderate or small doses seems to possess but little influence. Other observers, whose observations have been chiefly confined to the bedside, report that the drug has antipyretic powers, although even its most vehement supporters do not claim that it is very reliable as an antipyretic.

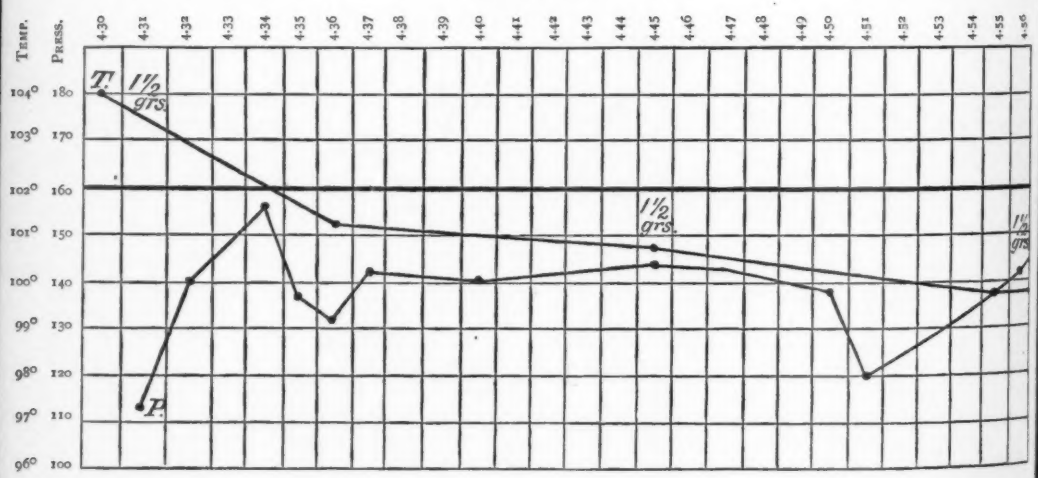
*Charts showing Arterial Pressure and its Relationship to Temperature, also showing Fall of Temperature produced by Salicylic Acid.**

Experiment 3.—Rabbit; weight, 3 pounds.



Experiment 4.—Dog; weight, 12½ pounds.

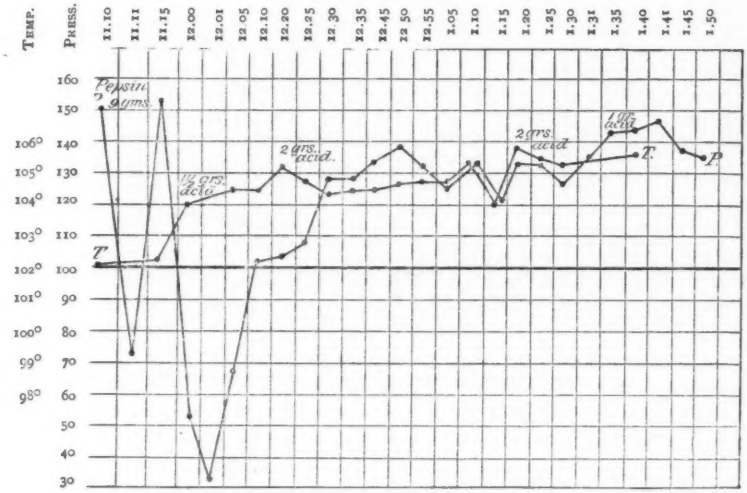
With Fever.



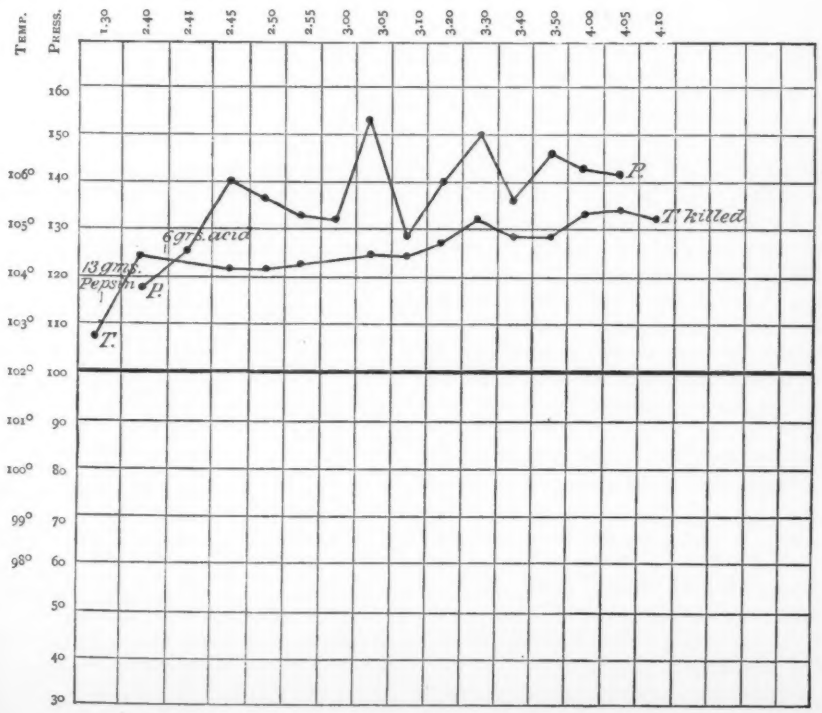
* It is proper to state that the details of many of the experiments have been left out owing to lack of space, not only in this portion of the paper but in the other portions also. In all, ninety experiments were performed, thirty on each drug.

Charts showing Arterial Pressure and its Relationship to Temperature, also showing Fall of Temperature produced by Salicylic Acid (Continued).

Experiment 5.—Dog; weight, 15 pounds.

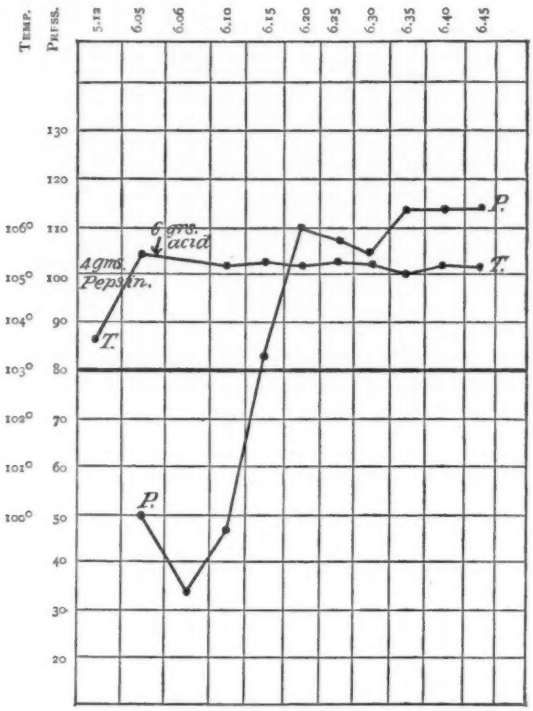


Experiment 6.—Dog; weight, 17 pounds.



Charts showing Arterial Pressure and its Relationship to Temperature, also showing Fall of Temperature produced by Salicylic Acid (Continued).

Experiment 7.—Dog; weight, 32 pounds.



The study of the action of this drug on the production and dissipation of heat is the most interesting portion of its investigation, and a somewhat minute analysis of the results is therefore not out of place.

We find that in two experiments there was a *gain* of both dissipation and production, and that in the first of these the two functions balanced each other, while the second (No. 9) dissipation was very markedly increased over production.

In two other experiments there was a loss or decrease of both functions (Nos. 10 and 11).

In No. 10 dissipation was decreased more than was production, while in No. 11 heat production was decreased more than dissipation.

In No. 12 there was loss of dissipation and gain of production.

It will be seen, therefore, that the results obtained as to the method by which normal temperature is decreased are not concordant, but from the first four experiments it seems evident that the drug acts on both functions in reducing normal temperature.

Experiment 8.—Dog; weight, 20 pounds.

Time.	Rec. temp.	Box temp.
A.M.		
11.00	104.7°	55.20°
12.00	.....	56.00°
1.00	104.6°	57.20°
	.1°	2.00°
1.15	4 grs. of salicylic acid into jugular.	
1.20	104.7°	57.05°
2.20	.....	.....
3.20	104.6°	59.10°
	.1°	2.05°

Hourly dissipation of bodily heat..... 122.000
Hourly production of bodily heat..... 121.250

Hourly dissipation of heat after drug..... 125.050
Hourly production of heat after drug..... 124.300

SUMMARY.

Hourly dissipation of heat before drug.....	122.000
Hourly dissipation of heat after drug.....	125.050
Hourly gain* of dissipation.....	3.050
Hourly production of heat before drug.....	121.250
Hourly production of heat after drug.....	124.300
Hourly gain* of production	3.050

Experiment 9.—Dog; weight, 16 pounds.

Time. A.M.	Rec. temp.	Box temp.
11.00	103.0°	57.60°
12.00	.....	.....
1.00	103.3°	58.90°
	.3°	1.30°
1.20	6 grs. of salicylic acid into jugular.	
1.30	104.3°	58.85°
2.30	.....	.....
3.30	103 7°	60.25°
	.6°	1.40°

Hourly dissipation of bodily heat.....	79.300
Hourly production of bodily heat.....	81.100
Hourly dissipation of bodily heat after drug.....	85.400
Hourly production of heat after drug.....	81.800

SUMMARY.

Hourly dissipation of heat before drug.....	79.300
Hourly dissipation of heat after drug.....	85.400
Hourly gain of dissipation.....	6.100
Hourly production of heat before drug.....	81.100
Hourly production of heat after drug.....	81.800
Hourly gain of production.....	.700

Experiment 10.—Dog; weight, 24 pounds.

Time. A.M.	Rec. temp.	Box temp.
10.55	103.7°	59.60°
11.55	.....	60.60°
12.55	103.4°	61.25°
	.3°	1.65°
1.15	8 grs. of salicylic acid into jugular.	
1.25	103.7°	61.05°
2.25	.....	.....
3.25	103.6°	62.05°
	.1°	1.00°

Hourly dissipation of bodily heat.....	100.650
Hourly production of bodily heat.....	97.950
Hourly dissipation after drug	61.000
Hourly production after drug.....	60.100

SUMMARY.

Hourly dissipation before drug.....	100.650
Hourly dissipation after drug.....	61.000
Hourly loss† of dissipation.....	39.650
Hourly production before drug.....	97.950
Hourly production after drug.....	60.100
Hourly loss‡ of production.....	37.850

Experiment 11.—Dog; weight, 23 pounds.

Time. A.M.	Rec. temp.	Box temp.
11.30	102.7°	58.45°
12.30	.....	59.95°
1.30	103.7°	61.10°
	1.0°	2.65°
1.40	8 grs. salicylic acid into jugular.	
1.55	103.0°	61°
2.55	.....	...
3.55	103.4°	63°
	.4°	2°

Hourly dissipation of bodily heat.....	161.650
Hourly production of bodily heat.....	170.275
Hourly dissipation of heat after drug.....	122.000
Hourly production of heat after drug	123.100

SUMMARY.

Hourly dissipation before drug.....	161.650
Hourly dissipation after drug.....	122.000
Hourly loss of dissipation after drug.....	39.650
Hourly production of heat before drug.....	170.275
Hourly production of heat after drug.....	123.100
Hourly loss of production after drug	47.175

Experiment 12.—Dog; weight, 35 pounds.

Time. A.M.	Rec. temp.	Box temp.
10.10	104.7°	61.95°
11.10	.....	.....
12.10	104.1°	66.05°
	.6°	4.1°
12.28	8 grs. of salicylic acid into jugular.	
12.35	104.1°	65.95°
1.35	.....	.....
2.35	104.7°	69.90°
	.6°	3.95°

Hourly dissipation of bodily heat.....	250.100
Hourly production of bodily heat.....	242.225
Hourly dissipation of heat after drug.....	240.950
Hourly production of heat after drug	248.825

SUMMARY.

Hourly dissipation of heat before drug.....	250.100
Hourly dissipation of heat after drug.....	240.950
Hourly loss of heat dissipation after drug.	9.150
Hourly production of heat before drug.....	242.225
Hourly production of heat after drug.....	248.825
Hourly gain of heat production after drug.	6.600

On analyzing the calorimetrical observations during fever we find that in one instance

* The word "gain" is used here as synonymous with *increase*.

† The word "loss" is used as synonymous with *decrease*.

‡ The word "loss" is used as synonymous with *decrease*.

(No. 13) we have a gain of both functions, but that dissipation being increased more than was production, temperature was decreased thereby. In No. 14 both functions were decreased, but that production was decreased far more than was dissipation, thereby permitting a fall of temperature.

Again, in No. 15 dissipation was not influenced, while production was decreased.

In No. 16 there was loss of both functions, dissipation being more decreased than production.

In No. 17 the same condition of affairs also held.

These results are much more discordant than those obtained on normal temperature, and agree with the experiments already given, showing that the drug does not have any positive power over fever.

Thus, in one instance, the fall of temperature depended on increased dissipation, and in two others on decreased production, while in the remaining experiments there was a rise in temperature due to a greater failure of dissipation than production.

Experiment 13.—Dog; weight, 12 pounds.

3.45 Rec. temp. 105°. Gave 1 grm. pepsin into jugular.

Time.	Rec. temp.	Box temp.
A.M.		
4.20	105.8°	66.30°
5.20	107.9°	66.50°
	2.1°	.20°
5.22	5 grs. salicylic acid into jugular.	
5.25	107.5°	66.30°
6.25	105.8°	66.80°
	1.7°	.50°

Hourly dissipation of heat before acid 24.400
Hourly production of heat before acid 43.300

Hourly dissipation of heat after acid..... 61.000
Hourly production of heat after acid..... 45.700

SUMMARY.

Hourly dissipation of heat before drug..... 24.400
Hourly dissipation of heat after drug 61.000

Hourly gain of dissipation after drug..... 36.600

Hourly production of heat before drug..... 43.300
Hourly production of heat after drug 45.700

Hourly gain of production after drug 2.400

Result.—Gain of both dissipation and production, the dissipation being increased the more.

Experiment 14.—Dog; weight, 24½ pounds.

10.30 Rec. temp. 103°. Injected 3 grms. filtered pepsin.

Time.	Rec. temp.	Box temp.
A.M.		
11.10	103.7°	61.15°
12.10	105.3°	62.45°
	1.6°	1.30°
12.25	Injected 6 grs. salicylic acid into jugular.	
12.30	105.0°	62.35°
1.30	105.2°	63 50°
	.2°	1.15°

Hourly dissipation of heat..... 158.600
Hourly production of heat..... 188.300

Hourly dissipation after drug..... 130.300
Hourly production after drug..... 133.670

SUMMARY.

Hourly dissipation of heat before drug..... 158 600
Hourly dissipation of heat after drug..... .. 130.300

Hourly loss of dissipation after drug.... 28.300

Hourly production of heat before drug..... 188.300
Hourly production of heat after drug 133.670

Hourly loss of production after drug.... 54.630

Result.—Loss of both functions, production being very markedly lessened.

Experiment 15.—Dog; weight, 12 pounds.

12.40 Rec. temp. 104.2°. Injected 3 grms. pepsin.

Time.	Rec. temp.	Box temp.
P.M.		
1.35	107.15°	63.35°
2.35	107.80°	63.70°
	.65°	.35°
2.37	6 grs. salicylic acid into jugular.	
2.40	106.70°	63.45°
3.40	107.10°	63.80°
	.40°	.35°

Hourly dissipation of heat..... 42.700
Hourly production of heat..... 48.550

Hourly dissipation after drug..... 42.700
Hourly production after drug 46.300

SUMMARY.

Hourly dissipation before drug 42.700
Hourly dissipation after drug..... 42.700

Hourly dissipation after drug unchanged.

Hourly production of heat before drug..... 48.550
Hourly production of heat after drug 46.300

Hourly loss of production after drug..... 2.250

Result.—Loss of production. Dissipation not affected.

Experiment 16.—Dog; weight, 22½ pounds.

Time.	Rec. temp.	Box temp.
P.M.		
3.45	104.5°	63.55°
4.45	104.8°	64.55°
	.3°	1.00°
4.47	Injected 6 grs. salicylic acid.	
4.50	104.5°	64.00°
5.50	104.9°	64.85°
	.4°	.85°

Hourly dissipation of heat	122.0000
Hourly production of heat	127.1625
Hourly dissipation after drug	103.7000
Hourly production after drug	110.4500

SUMMARY.

Hourly dissipation before drug	122.000
Hourly dissipation after drug	103.700
Hourly loss of dissipation after drug	17.300
Hourly production of heat before drug	127.1625
Hourly production of heat after drug	110.4500
Hourly loss of production after drug	16.7125

Result.—Loss of both. Greater loss of the two is in dissipation.

Experiment 17.—Dog; weight, 19½ pounds.

10.15 Rec. temp. 103.7°. Injected 3 grms. of pepsin filtered.

Time. A.M.	Rec. temp.	Box temp.
11.00	104.7°	62.45°
12.00	104.6°	63.40°
	.1°	.95°
12.02	6 grs. salicylic acid into jugular.	
12.15	103.7°	63.25°
1.15	104.7°	64.00°
	1.0°	.75°

Hourly dissipation of heat	115.900
Hourly production of heat	114.438
Hourly dissipation of heat after drug	91.500
Hourly production of heat after drug	106.125

SUMMARY.

Hourly dissipation of heat before drug	115.900
Hourly dissipation of heat after drug	91.500
Hourly loss of dissipation after drug	24.400
Hourly production of heat before drug	114.438
Hourly production of heat after drug	106.125
Hourly loss of production after drug	8.313

Result.—Loss of dissipation and production, the loss of dissipation being the greater.

A SUMMARY OF THE ACTION OF SALICYLIC ACID ON BODILY TEMPERATURE.

1. *Salicylic acid* has the power to reduce slightly normal bodily heat.

2. *Salicylic acid*, according to the writer's experiments, has but little power over pyretic temperature.

3. *Salicylic acid*, when acting on either normal or abnormal temperature, does not seem to have much influence on the circulation either in regard to pulse-rate or arterial pressure. Any change, when it occurs, seems to be an increase of arterial pressure rather than a decrease, and this increase occurred more markedly in the normal than in the pyretic animal.

4. *Salicylic acid*, in reducing normal temperature, probably acts on both functions, namely, production and dissipation, while it seems to act very uncertainly and irregularly when reducing high temperature, failing frequently, as before stated, to prevent an increase of bodily heat.

(To be continued.)

CROUPOUS PNEUMONIA OF THE APEX ATTENDED BY A UNIQUE SYMPTOM.

By Louis Starr, M.D.*

THOUGH the histories of isolated cases are, as a rule, unread, and therefore useless, I cannot but believe that the following details of a case of apicial pneumonia will be of interest to all students of pediatrics, as they present a symptom that has certainly never occurred before in my somewhat extended experience with this peculiar form of pneumonitis, and which, so far as I know, has never been recorded.

Percy P., a well-nourished English boy of 4 years, was admitted to my wards in the Children's Hospital on April 15, 1887. There was no history of tuberculosis, and, with the exception of an attack of scarlatina sixteen months before, the child had enjoyed perfect health. On the day before admission he was at school, though while there he was in a febrile state and drank freely of water, afterwards vomiting and complaining of pain in his head. That night he was restless and feverish, and had short and rapid breathing, the expiratory movement being attended by a grunt or complaint of pain.

When first seen the little patient's condition was as follows: face drowsy in expression, a slight herpetic eruption on lips, and a bright circumscribed flush on the right cheek; decubitus right lateral, with the head markedly retracted, the neck stiff, the spine arched forward, the arms pressed close to the sides and folded across the chest, the thighs drawn up towards the abdomen, the legs flexed on the thighs and the feet crossed,—a decided *en chien de fusil* position in fact; tongue heavily coated, breath offensive, no vomiting, bowels active, and abdomen rather distended; respiration 40 per minute, with active nostrils, grunting expiration, and frequent hacking cough; pulse 140, regular and quick; skin dry; axillary temperature 104° F.; no *tache cérébrale* nor hyperæsthesia; urine scanty and

* Clinical Professor of Diseases of Children in the Hospital of the University of Pennsylvania.

heavy with lithates ; cerebral activity blunted, but patient readily roused ; well-marked physical signs of consolidation of the upper lobe of the right lung.

The subsequent course of the case can be seen at a glance from the subjoined table :

Day of disease.	Temperature.		Pulse.		Respiration.		Movements of bowels.
	M.	E.	M.	E.	M.	E.	
2	104°	104°	.....	140	...	40	
3	101*	103.2	110	142	25	50	1
4	103.8	104	140	126	42	48	2
5	103.2	103	146	138	44	50	2
6	103.8	104	122	138	40	40	5
7	103.8	102.8	118	130	44	50	2
8	103.2	103.6	142	126	50	50	4
9	101.2	103	136	130	50	50	2
10	100.4	100	132	106	40	38	1
11	97.2	99	100	124	32	30	4
12	97.8	98.4	100	100	32	28	4
13	98.4	98.2	120	88	28	30	3
14†	98	98	100	86	24	26	1

* Can only account for this fall by shock consequent upon the long journey to hospital.

† Convalescence thoroughly established.

The peculiar decubitus,—the special feature of the case,—together with the other general symptoms, continued unchanged in character throughout the illness, and the former did not diminish until the temperature began to fall on the ninth day, and did not disappear entirely until the temperature settled to the normal line on the fourteenth day.

The treatment consisted of a liquid diet,—milk and beef-tea in small quantities at short intervals,—quinine (by suppository) and whiskey to maintain the general vigor, digitalis to slow and strengthen the action of the heart, counter-irritation, and a cotton jacket over the right lung. Bromide of potassium was administered in small but repeated doses for several days during the height of the attack, on account of the marked cervico-spinal rigidity, and carbonate of ammonium at the end to aid in stimulating the heart.

In ordinary cases of cerebral pneumonia there is little to draw attention to the lungs. In place of flushed cheeks, active nostrils, rapid breathing, frequent hacking cough, and high fever, the face is pale, the nares passive, the cough slight or absent, the breathing quiet, and the fever moderate in degree. On the other hand there are vertigo, muscular twitchings, and marked and persisting drowsiness sometimes approaching stupor ; all pointing to cerebral disease. Without care a mistake is easy. Suspicion is first excited by noting the absence of certain prominent features of tubercular meningitis. Thus there is no history of an insidious and protracted prodromal period, no obstinate vomiting nor constipation, no retraction of the abdomen, no slowing of the pulse, no irregular, sighing respiration, no *tache cérébrale*, no squinting or irregularity of the pupils, and no absolute unconsciousness. Should these points strike the observer, and he remember that there is such a disease as cerebral pneumonia, an examination of the chest will follow and the key to a diagnosis be found.

In the case I have reported there were quite enough symptoms to at once direct examination to the lungs, at the same time the drowsiness of cerebral pneumonia and the peculiar decubitus of tubercular meningitis were prominent. Having examined the lungs little difficulty was experienced in reaching a conclusion, proved to be correct by the subsequent course of the disease. This, then, was an easy case, but it is none the less instructive. It carries a warning that may save future anxiety and delay, and prevent the embarrassment of a mistake.

ACUTE CEREBRO-SPINAL MENINGITIS.

By Joseph X. Zitéke, M.D., Batesville, Ind.

IT is a fact well known to the general profession that in the course of years—sometimes after a lapse of half a century—there are seasons in which cerebro-spinal meningitis appears suddenly and unexpectedly even in the farthest districts from large cities in an epidemic form, spreading rapidly over a certain district of the territory, and after a stay of some weeks or months disappears again as suddenly as it had come in.

During the last twelve years of my practice I had occasion to observe three such epidemics of this dreadful disease, and I must confess that the mortality of two of them was rather more than distressing to me to contemplate. The last one was, perhaps, not of the most virulent type, hence, perhaps, the more satisfactory results observed and obtained.

Besides this form of cerebro-spinal meningitis, there appears, also, another one (a less independent form), complicating other diseases, and thus lessening the at best dubious chances of recovery. It is this latter form of the disease that seems to me to have caused a considerable confusion in the pathology of the disease, for many of the best authors seem to consider meningitis as the

primary, and the accompanying disease as the secondary, pathological state of the body, whilst other writers, and perhaps the more profound thinkers of the profession, consider meningitis as a secondary pathological process following in the wake of another one,—the primary.

This question, however unimportant it may seem, has nevertheless a great significance and importance in general practice, to which I shall return again when considering the etiology and nature of cerebro-spinal meningitis.

That cerebro-spinal meningitis is by no means one of the new diseases of the nineteenth century, as some of our medical authorities would try to convince us, can be easily proven by the study of ancient medical records, and by the symptomatological history of the many epidemics which devastated Europe during the latter period of the middle ages and during the first centuries of the new era. Thus, if we consider the most important symptoms of the historically recorded plagues of the past centuries, we shall find it specially mentioned by Simon de Lovicka, "De preservatione a pestilentia," vol. i. pars i., folio edition. Pragensis, 1537.

Other authors of those years give the same symptoms of the fatal plague which scourged Europe so dreadfully in those times. Another but very little differing account can be found in the work of the same author, entitled "Enchiridion Medicinæ," Krakau edition, 1537.

Johanes Agricola gives the history of the pest in a work entitled "Historia Pestis Nigræ," which was published in Prague in 1535, at which time the university had the greatest reputation as to medical studies. Soon after the work of Master Agricola, another professor of the same university published a book on the same subject. It was Magister Udalricus Leonorus a Cauba (1535), a graduate of Padua, who opposed quite earnestly all *bloodletting and violent administration of salts* in the disease, and advised chiefly rest and "regimen corroborans naturam debilitatam." He also compounded a bolus, which he called "bolus pestilentiæ," and which he prescribed to some noble lord, and vouched for its action as "qui operat sedative, dolorem mitigat, somnum excitat, et sic per quietem cerebri totum corpus sanatur." (How is that for 1535?) He seems to have been a rather stout man of considerable adipose tissue, and both his success in treating the plague and his colossal, fat figure gave origin to the following couplet:

"Tam desperanti devit hanc*—Leonorus nicerte
Excellens medica—corpore crassus homo."

From which it is evident that even in the sixteenth century professional reputation was considerably united with the exterior of the doctor.

Another writer on the same subject is Petrus Andreas Mathioli (1552), an Italian, a graduate of Padua, Paris, and Prague, who wrote the celebrated work "Epistolarum Medicinalium libri quinque" (Pragæ, 1561), which work was later translated both into German and Bohemian, though it met with a great opposition at first from the medical faculty of the university, chiefly on account of the author's opposition to blood-letting and salts in the plague, which latter disease he calls "morbus maculatus," or for the first time, "pestilentia cerebri maculata nigra."

It would be too long and too tedious if I should try to introduce here even the names of all the authors of the middle ages who wrote about the celebrated plagues of Germany, Italy, and England, however barren English literature may be on that subject. From their writings, however, and from the symptoms enumerated and so clearly stated, we can hardly doubt that the celebrated plagues of the middle ages and the pestilent, acute, and malignant form of cerebro-spinal meningitis, if not the same disease, were surely very consanguineous, and of a very near and true relationship.

Thus the well-known pestilence which followed the bloody, ambitious war of Charles V., of Germany, and Francis I., of France, had so many characteristic symptoms of our cerebro-spinal meningitis, that it is very hard to doubt their identity of nature. Though very little is said about this renowned plague in the works of Master Ambrosius Parrè, or in those of Magister Amboise, yet an old volume which for many years was preserved in the monastic libraries of Ossegg, and which was attributed to the celebrated perfumer, astrologer, and poisoner of Queen Catharine de Medici, Renée, the Florentine, gave such accurate descriptions of the symptoms of the pestilence that they hardly differ from those given by other writers of more professional character and respectability, and thus indirectly confirm, which directly to do they should perhaps never be called on.

The further progress of the cerebro-spinal meningitis during the last two centuries all over the world is ably traced in Pepper's

* Sanitatem.

"System of Medicine," under the head of "Cerebro-Spinal Meningitis" (vol. i.). The name by which this special disease was designated was widely differing in the various countries.

Thus we find it called "pestis," "pestis nigra," "febris maculata," "pestis maculata cerebri celer," "febris maculata nigra," "la febre convulsiva," "febbre soporosa," "fièvre satanique," "fièvre maculèe." The popular name in England and United States was the "spottëd fever," which name is even now used by the people, though every educated physician should avoid it, because it expresses by no means the meaning of "cerebro-spinal meningitis." For, if we consider the multitude of diseases which terminate with a cutaneous purpuric and hemorrhagic eruption of the skin, it would be very difficult for us to form a definite idea from such an indefinite and general nomenclature of a pathological state as is expressed by the words "spotted fever." The German and Sclavonical popular term—das "steifneckfieber"—is far more better chosen, and gives a more clear idea of "cerebro-spinal meningitis," because it recalls at once to the mind the most characteristic symptom of the disease, and that of such an importance to the physician that in many cases of doubtful nature where no positive diagnosis has been or could be made, this essential symptom settled the diagnosis of cerebro-spinal meningitis.

As to the etiology of cerebro-spinal meningitis but little can be said. It appears that in all countries can be found its field of "deadly action;" that it can be traced far in the north and deep to the south. However, it is mostly at home in a warm climate. That it is not caused by uncleanliness is proved by its appearance in the houses of the rich as well as of the poor, and perhaps more among the better class of mankind. Another characteristic proof seems to be in the fact that cerebro-spinal meningitis has not yet visited Russia and Poland. Whether a micrococcus or bacillus, introduced in some way into the animal economy, is its cause is till now not determined. But, if we consider the fact that so many diseases are now charged to the general bill of these microscopic organisms, we can hardly deny the general possibility.

The persons mostly affected by the disease are young children, and persons from thirty to thirty-five years of age. Males seem to have more affinity for the disease. This latter fact was so well known to the medical men of the middle ages that Archbishop Albicus, formerly the dean of the medical faculty of Prague and the body physician of the Emperor Charles IV., says, in his work "De Pesti Maculata Nigra," "Mares ab ispsa afficiuntur plus quam feminæ, et mortalitas major est in genere masculino, quam in feminino."

Some of our later observers, chiefly of French origin, try to establish among the causes of the disease homesickness, excesses in Baccho et Venere, sudden changes of temperature, dry and wet seasons following in quick succession, sudden mental shock, and finally violent mental emotion.

It is hard to form a definite opinion where so many various states contend with each other for acceptance, but if we consider the fact that the greater number of victims of cerebro spinal meningitis are young children, and boys and girls hardly yet arrived at the age of puberty, we can surely eliminate from the above-named list the excesses in Baccho et Venere, as well as the sudden mental shocks and mental emotions.

As to the disease itself, after years of study, it is finally determined that it is *not contagious*. *The forms* of cerebro-spinal meningitis, as observed on the sick-bed, are various, hence many medical writers made so many distinctions and contra-distinctions among the different types of the disease that they are very apt more to confuse the student than to instruct him. The whole divisions and classification of the various types of cerebro-spinal meningitis may be found in Pepper's "System of Medicine" in all its fulness, and may be very interesting reading for the experienced physician, but by no means the proper food for the mind of the young student or physician, whose mind has not yet in its possession a clear and firm picture of the general character of cerebro-spinal meningitis.

For this reason I prefer the simple division of Niemeyer, who recognizes but *one form* of acute cerebro-spinal meningitis, subject, however, to changes and modifications of its symptoms according to the virulence and acuteness of the disease itself and the psychological and physiological qualities and status of the patient. Retaining thus these two chief points in view, and submitting to our consideration all the changes which an inflammatory, acute process does and must produce in various persons of various temperaments, ages, nutrition, and development; also considering now one, now another of the pathologically important and characteristic symptoms which may become prominent, we shall easily form for ourselves all the various types

of cerebro-spinal meningitis that fill our text-books and mislead the beginner, and see them for ourselves without any didactic teaching, and without any following confusion and the consequent uncertainty and doubt.

Some other existing forms of cerebro-spinal meningitis are mostly not of primary origin, but of secondary nature. Such cases are usually observed as following in consequence of pneumonia or pleurisy, exanthematic fevers or other infectious diseases, the most important of which are Bright's disease and typhoid fever.

Another class of the same disease is also observed as produced mostly by physical forces, as blows on the head, falls from an elevation, etc. It seems also that exposure to the hot rays of the sun can produce cerebro-spinal meningitis.

Finally, the last class of this secondary origin is the cerebro-spinal meningitis called forth by syphilis, which is clearly described in Ziemssen's "Handbook."

The epidemic appearance of cerebro-spinal meningitis in large barracks and penitentiaries seems to be a kind of blood-poisoning, the specific nature of which is not yet well determined.

Symptoms, Prognosis, and Treatment.—Cerebro-spinal meningitis is one of those diseases that attack a human being often suddenly and without any *stadium prodromorum.* A child, a boy or girl, may appear quite healthy at supper-time, may not complain at all, or its appetite may be not quite to the normal, when suddenly near or after midnight the whole household is awakened from sleep by its complaints of a violent headache. The face is flushed, the eyes bright, the pupil dilated. The child moans continually, interrupting the moaning by violent screams, which are heard all over the house. These screams, which, at the beginning, may be heard but at long intervals, become more and more frequent, the patient becomes restless, throws his hands, his feet, his whole body all over the bed. All the body is in motion except the head, which usually is kept at rest. By and by convulsions set in, which terminate by a comatose condition, which is interrupted by low, meaningless, plaintive moaning, and which usually ends in death after a lapse of from forty-eight hours to five or six days. At the same time the stomach is usually deranged, frequent vomitings set in, which, by the violent strain and by the increased hyperæmia of the cerebral blood-vessels, still further augment the pain, and thereby make the patient often appear as dead or nearly dying.

The bowels are usually constipated, but I have seen cases in which they have been very loose, and by this very symptom, and the tenderness in the abdominal region, and the great headache, might have led to a mistaken diagnosis if the thermometer had not shown us the right direction in which to travel in quest of the true one.

The temperature is usually in no proportion to the violence of the general symptoms, and seldom reaches 102°. The pulse is usually slow, and very seldom over 110 beats in a minute. The tongue is covered with a whitish or light yellow fur, while the lips bear evidence of the existence of a herpes labialis. In some cases a roseola eruption may be observed on the chest and abdomen. The thirst is usually great, yet, as soon as a drop of water has reached the stomach, the awful straining of vomitus sets in. Sometimes a slight strabismus may be observed in one or the other eye, sometimes in both. The same may be said of deafness, which occurs, in the majority of cases, at the same time as the strabismus has appeared. On the third, fourth, sometimes even not till the sixth day, the characteristic symptom of cerebro-spinal meningitis sets in,—*i.e.*, the stiff neck, produced by the contraction of the long neck-muscles,—and thus removes all doubts, if any were existing, in respect to the correctness of the diagnosis.

The prognosis is always doubtful and serious, the termination usually fatal. Indeed, as long as the old treatment was strongly and unmercifully followed, with its bleeding, leeches, cantharides-plaster, etc., all used and applied as if man was made from a mass of immutable, never-changing, never-differing material, the general death-rate was appalling. Some twenty years ago, in an epidemic in Austria, of one hundred patients confined in the hospital for treatment, only three escaped with their lives. But in what a state! It had been, perhaps, better for them if they had followed the great caravan of their fellow-sufferers.

In fact, though science has furnished to our hands in these days better knowledge of the pathology of the disease and more suitable drugs for its resistance, it is yet true that the general mortality of cerebro-spinal meningitis is very great, and that the general state of health of the convalescent is far from being envied. Indeed, experience teaches that many of those convalescents remain afflicted for a

long time, if not for the whole term of their natural life, with one or another of the many diseases which have taken their origin from the destructive process of the inflammation of the meninges and consequent effusion into the arachnoid cavities. Thus, we find some suffering from a life-long photophobia, others from strabismus, from deafness, blindness, or from general or partial paralysis of some part. And, again, others, though the animal functions of their organisms seem not to have been deranged at all, lose all their mental abilities and capacities, become idiotic, demented, and even epileptic.

Such is the prognosis and course of cerebro-spinal meningitis. The convalescence is usually very slow, and requires just as careful medical attendance as the acute stage of the disease.

Treatment.—The general treatment of cerebro-spinal meningitis was till perhaps the last decade more or less antiphlogistic. Quantities of blood were taken, either by the lancet, the cup, or the leech. Even in our own days there are still some physicians who cannot treat cerebro-spinal meningitis but with a cup or a leech. The same may be said of the application of mustard-poultices to the neck, or of cantharides-plasters to the occiput. As for myself, I never found them beneficial. The counter-irritation which produced a more or less large blister had no beneficent effect on the disease itself, while the annoyance produced by the irritation was of harmful consequence to the patient. Further, nearly in all cases where cantharides were employed dysuria took place, and the patient underwent regular torments as often as he was obliged to urinate.

How far the use of drastic purgatives or large doses of salts are of benefit I cannot say, for I never employed them, as, considering the debilitating state of the febrile process itself, I did not consider them pathologically applicable to such cases.

Till the year 1879 I tried in many cases the above-mentioned treatment, complicating it with the use of cold or hot cloths on the head, and internal administration of quinine and other antipyretics. But I must say that the success that followed such a treatment was nearly *nil.*

It was in 1879 that cerebro-spinal meningitis raged in my neighborhood, and at one time I had about nine cases under treatment. They all were in one house, in a college, where they had been sent for education. The consulting physician was a man of the old school, thoroughly addicted to the old antiphlogistic treatment, and nothing could convince him that it was wrong both in practice and theory.

At that time I was well acquainted with the fact that morphine, or any form of opium, was highly recommended in the disease, but the gentleman was obdurate and would not listen. The consequence was that eight of our patients died in a comatose condition between the fourth and sixth day of their illness. The ninth of the group was sick the second day at that time, and I had but very little hope that he would pull through. Fortunately, the old doctor became himself unwell, and could not come to see the patient, who from that time on remained entirely in my care. I changed the treatment immediately, stopped the nauseous mixtures of quinine, threw away the cantharides-plaster, and commenced a pure morphine treatment, with plenty of fluid nourishment and cold applications on the head.

The effect was soon visible to all. The patient grew quiet, slept for several hours, day and night, and finally recovered. This single successful case from nine was deeply interesting to me, and I determined to study the effect of morphine in cerebro-spinal meningitis more carefully at the very next opportunity.

This opportunity, however, did not come for many years, till it arrived in the month of January of this year. The case was as follows: S. H., aged 13, male, son of healthy parents, was taken sick one Sunday evening with pain in his head, vomiting, pain in his limbs, considerable tenderness in the hepatic and stomachic region. There was also constipation for two or three days. The conjunctiva slightly yellow, also the tongue covered with yellowish white fur; slight moist râles observed on the chest; no cough; temperature 100°; pulse 96 per minute; urine normal. A compound cathartic was administered, consisting of hydrarg. chlor. mit., jalap, ipecac, and colocynth, which was followed by two or three copious evacuations of dark greenish color and sickening smell. After these evacuations his head seemed a little relieved, and the vomiting was for a time arrested.

The following night, about two hours after midnight, the pain returned again with increased violence, and the frequent vomiting seemed to torment the boy to the utmost. External applications of menthol, camphor, Hoffman's anodyne were tried, but without any benefit. The face became flushed, the pupils dilated and sparkling, the hands and

feet burning hot and dry. About every twenty minutes he screamed from pain with such force that he was heard all over the house. The restlessness continued, and became more violent as time went on, the screams became more frequent, and he finally fell into convulsions, so that three men were necessary to hold him in bed.

As I had been but recently introduced into the family, I called a consultation, which ended in the application of an anal injection of hydrate of chloral. However, the effect of the drug was but of short duration, hence I proposed to make an injection of $\frac{1}{6}$ grain of sulph. morph. hypodermically. This was done, and soon afterwards the patient fell into a quiet sleep. Meanwhile, ice-cold applications were made on the head day and night. Till that time no positive diagnosis was made, yet my experience from the previous cases mentioned inclined me very much to suspect either an encephalitis or cerebro-spinal meningitis.

During the whole time the pulse was hardly more than 90, the temperature 100° or 101°.

On the night of the third to the fourth day the patient was very restless, so that several injections were necessary to keep him quiet. On the same day the characteristic sign of cerebro-spinal meningitis appeared, and my previous suspicions were confirmed.

As soon as the diagnosis was established I determined to rely exclusively on morphine, if no extraordinary circumstances should call for other treatment. As the vomiting still continued, the drug was given hypodermically, and rectal alimentation begun. Every three hours an injection was made in the stomachic region, and every four hours a two-ounce syringe filled with Carnrick's beef peptonoids injected into the rectum.

The following observations were made at that time (January 26):

Time.	Temperature.	Pulse.	Note.
12 M. injection.	101°	96	Restless.
12½ P.M.	$99\frac{4}{10}$°	90	Quiet; sleeping.
2 P.M.	$99\frac{1}{10}$°	89	Little moaning.
2½ P.M.	$99\frac{1}{10}$°	91	Little restless.
2¾ P.M.	$100\frac{5}{10}$°	97	Very restless; moaning.
3 P.M. injection.	101°	100	Very restless; moaning.
3½ P.M.	$99\frac{1}{10}$°	90	Quiet; not entirely.
4 P.M.	99°	88	Very quiet; sleeping.
5 P.M.	$99\frac{4}{10}$°	88	Quiet.
5½ P.M.	$99\frac{8}{10}$°	92	Restless.
5¾ P.M.	$100\frac{2}{10}$°	94	Very restless.
6 P.M. injection.	$100\frac{8}{10}$°	98	Very restless.

This table shows how the morphine injections affected the patient. About one-half or three-quarters of an hour after the injection the boy became quiet, and when not sleeping he was able to understand every word that was spoken in the room. A clear example, or rather confirmation of this assertion, happened that very day. The Catholic priest, who had given him the sacraments, asked me in regard to the prognosis. As the parents of the boy were in the room, I answered him in Latin, to which the priest answered in the same language. He did not mind the boy, as we thought him asleep. In the evening some conversation was started, in which something was said about Latin. At once, quite unexpectedly to us all, the sick boy said, "The priest and the doctor spoke Latin this morning." This one fact speaks for the use of the drug as it was applied.

The treatment was continued in the same manner till the fifth day, when I determined to have the patient's head shaved, and applied a cap of oil-silk, after having had rubbed into the occipital region of his head a portion of a ten per cent. iodoform ointment.

The next few days the restlessness, which usually appeared about two and one-half hours after the injection of morphine, did not come till nearly three and one-half hours had passed. The vomiting was stopped also. Henceforth the drug was given by the mouth in a watery mixture, to which an equal quantity of caffeine was added. A teaspoonful was given every four hours.

The seventh day the time was prolonged to five hours, and on the eighth day none was given during daytime, and only one dose during night.

From that night real convalescence began.

Besides this case I had two more cases of the same disease, which, treated in the same way, ended also in convalescence.

Dr. Timermann, of Huntersville, had at the same time some cases on hand which were treated also with morphine, yet, as I hear that gelsemium and other drugs were used, I cannot say how much of the good effect was derived from the action of morphine and how much from gelsemium.

As for myself, I neither tried ergot nor gelsemium, but morphine alone, hence the result must be put to the account of that drug. The pathological anatomy of cerebro-spinal meningitis I omitted purposely, as being well known to every educated physician.

A CASE OF CHANCROID SUCCESSFULLY TREATED WITH MERCURY.

By C. L. Dodge, M.D., Kingston, N. Y.

I WAS consulted in April, 1886, by Mr. A. He had contracted a venereal ulcer a few days before, which was situated on the prepuce, and which I unhesitatingly pronounced a chancroid. I treated it in the usual way. First gave him a prescription of calomel and oxide of zinc, equal parts of each, to dust on the sore, with a small piece of lint to cover it, the foreskin then being drawn forward. This was continued for several days with no improvement, the sore, on the contrary, enlarging and becoming more painful. I then made a solution of iodoform in ether, and directed him to paint it carefully with a camel's-hair brush. This he tried for several days without any better result. I then told him if he would put up with the odor of iodoform I would give him some of the pure drug, which I felt confident would soon bring about a change for the better. Much to my surprise and the great annoyance of the patient, this seemed to have no better effect than the solution. After continuing for a reasonable time, I at last used a solution of nitrate of silver, twenty grains to the ounce, the ulcer meanwhile spreading and enlarging, and becoming more painful every day. After using the nitrate of silver for three days without any improvement whatever, it occurred to me that possibly I might have been mistaken in my diagnosis, and might have a true chancre to deal with. I then gave him 5 grains of hydrarg. cum creta three times a day. In less than a week the sore began to improve, and I congratulated him on the fine appearance it then presented, and told him he need not return for a few days to come, as it was doing so nicely. Two days later he met me on the street, and told me he had a sore mouth. Without stopping to inquire further, I at once took it for granted that it was owing to the use of the mercury; and I then told him to discontinue taking the powders, and gave him a prescription for a solution of chlorate of potassium as a mouth-wash. He returned in a few days, and told me that his mouth was all right, but the sore was almost as bad as ever. Upon inspection this proved to be true. I now carefully inquired as to the sore mouth, if there had been a bad taste, sore teeth, and an excessive flow of saliva. He then told me that none of these symptoms were present, but he had a broken back tooth, which he thought had caused the trouble in the side of his cheek, and this proved to be the fact. He went to a dentist, had it properly treated, after which he had no more sore mouth. I now immediately resumed the mercury, and in a few days improvement was evident. The treatment was continued for three weeks, and at the end of that time the sore was completely healed, and gave no further trouble. I now supposed I had a case of syphilis, and had been mistaken in my diagnosis of chancroid. Here was a case presenting a single sore, with no induration of base, however, secretion quite profuse and purulent, and causing a good deal of pain. There were no enlarged ganglia at any time, as I took particular pains to determine positively. Now, this man has been under my observation from that time to the present,—fifteen months. I see him every day, and he has never had any of the secondary symptoms of syphilis, and is to-day a well man. Now, what was this case, chancre or chancroid? I am firmly convinced that it was chancroid. Bumstead* says, "In my own practice I have learned to regard the appearance of secondary symptoms between the fortieth and fiftieth day after the development of the chancre as almost certain, and I have never seen a case which was carefully watched in which they failed to show themselves within three months. Ricord's limit of 'six months' will certainly include the most extreme cases." If this had been a true chancre secondary symptoms ought certainly to have shown themselves long before this. No one would presume to say that he was *cured* of *syphilis* by 5-grain doses of mercury with chalk in three weeks, so I think I am warranted by the facts in affirming this to be a case of chancroid, as I first believed it to be. Now, mercury is said to be always useless and in most cases injurious in chancroid. Under treatment of chancroid Bumstead† says, "The internal use of mercury has no beneficial influence whatever upon the chancroid, which continues in a state of stubborn persistency, or even progresses, after the system is fully under the influence of this mineral. This statement is not a mere inference from the distinct nature of the chancroid and syphilis, but is founded upon experience. I was fully convinced of the fact by personal observation, and ceased to employ mercury for 'soft chancres' several years before the distinction between the two species was recognized. Since abandoning it in my own practice I have had

* "Venereal Diseases," p. 438. † Ibid., p. 365.

numerous opportunities of observing other surgeons administer mercurials for the chancroid, and my former opinion has only been confirmed." Authorities are pretty well agreed as to the impropriety of administering mercury in the so-called "soft chancre." In this instance I was led to the use of it from a belief that it might be the true infecting sore, and well knowing the almost marvellous effect that mercury often has upon rebellious chancres, I prescribed it here. Believing this case to be unique, I have recorded it for what it may be worth.

POISONOUS SYMPTOMS FROM NITRO-GLYCERIN.

By J. Noer, M.D., Stoughton, Wis.

ON November 14, 1886, I was called to see Mrs. O. S., age 47. I found her in bed, propped up with pillows into a semi-recumbent position. Face was very pale, and general appearance indicated great prostration and dejection; skin was cold, and covered with a clammy sweat. Breathing slow and heavy. Pulse tense, rather slow (50 to 65), and irregularly intermittent. For a short time it would intermit regularly every third beat, and then it would beat regularly for twenty to fifty beats, when the heart would suddenly stop for a second or two and then start again to repeat the irregular pulse as before. Temperature in the mouth was 99$\frac{4}{5}$° F. Pupils dilated, urine scanty, very dark in color, and passed with a great deal of pain and tenesmus at the neck of the bladder apparently. A hasty examination of the urine gave the following results: reaction neutral; sp. gr. 1030; large deposits of solids, principally urates and phosphates. Heller's test gave a very copious deposit of blood-pigments in a test-tube. Auscultation of the heart revealed a peculiar loud booming, seemingly distant, sound, synchronous with the ventricular systole, masking almost entirely the second sound of the heart, while the ventricular contraction appeared to be greatly prolonged. The area of the apex-beat was greatly increased, while the sounds in the aortic region were almost entirely inaudible.

The patient complained a great deal of the pain in the region of the heart, which she said was sharp and intense. There was intense headache, with hammering sensation in the temporal region, and a constricting band round the forehead. There was also great weakness and muscular prostration. These symptoms, she stated, had been present for about three days.

I was at first unable to decide as to what to attribute these signs and symptoms; but finally I concluded that they must be due to the action of some poison. I soon ascertained that my patient was an old asthmatic, and that she had about three weeks previous to my visit consulted an eminent European physician, who was at that time sojourning in a neighboring city. After examining the mixtures which she was taking, and reflecting upon the symptoms that they had evidently caused, I concluded that nitro-glycerin might very probably be the offending ingredient. I directed the patient to take no more of my predecessor's medicines, and prescribed Tonquin musk, gr. vi, in suppositories, to be used every third hour; strychnine sulphate, gr. $\frac{1}{30}$, four times a day; pot. iodide, gr. v, in solution after meals. In a few days patient expressed herself as quite recovered. Pulse was, however, intermittent, and urine contained traces of blood for over a week after my first visit.

Upon investigation I found that Mrs. S. had been taking the following mixtures for two weeks:

℞ Sol. nitro-glycerin. alcoholic., 30.
Sig.—Ten drops night and morning.

℞ Decoc. lichen. island., 25–250;
Pot. iodidi, 15;
Pulv. Doveri, 5. M.
Sig.—One tablespoonful after each meal.

℞ Fumigatoires pectorales (Français), 1 box.

It is evident that the nitro-glycerin solution was the cause of the trouble with Mrs. S. The directed dose of 10 drops had not been taken till a few days before I saw the patient, she having begun with a dose of 3 drops, and increased to 8 drops, which dose had been taken for some time. The 10-drop dose had been taken only a few times.

I think the physician may be open to criticism in this case, first, for prescribing a large and very uncertain dose (drops from a vial) of a dangerous, uncertain, and almost untried remedy to a patient that he never expected to see again; and, secondly, for not warning his patient of the danger. His dose is a very large one, and I believe the patient stated that she had been cautioned by the druggist.

New and dangerous therapeutic agents ought not to be used by travelling physicians nor by any physician who cannot see his patient frequently. I could in this case have helped my learned countryman into a very

disagreeable malpractice suit had I been so disposed. These can, however, bring nothing but disgrace to the medical profession, however much glory and cheap notoriety they may bring to the instigator.

CARBOLIC ACID POISONING FROM THE USE OF CARBOLATED COTTON WITH A CHILD.

Dr. Jules Simon reports the following case in *Revue Mensuelle des Maladies de l'Enfance:*

A little girl, aged 22 months, had a swelling of the submaxillary glands, for which tincture of iodine was applied, but, unfortunately, so strong that its escharotic effect was produced, and an ulcerated surface was formed. This was dressed with iodoform gauze and also carbolic acid wadding. Twenty-four hours after the first dressing the child was restless, complaining of pain in the head; the throat dry; the conjunctivæ injected; and coryza was present. The temperature was slightly raised, and the pulse very frequent.

The physician in attendance, fearing iodoform-poisoning, removed the iodoform gauze, but continued the carbolic dressing, and added borated cotton to the dressing.

Forty-eight hours after the first dressing the child was taken with uncontrollable emesis, prostration, and anuria; the carbolic acid dressing was then removed.

Great improvement followed in twelve hours, and in twenty-four hours the child was convalescent. The beginning of improvement was marked by the passage of a considerable quantity of urine almost black; the urine increased steadily in quantity, and became quickly normal. The fact that the urine gave no reaction for iodine showed that the poisoning was not due to that agent, while all the symptoms pointed to carbolic acid as the toxic agent.

CALCIUM GUMMOPHOSPHATE.

The administration of compounds such as those known under the names "lactophosphate," "chlorhydrophosphate," and "citrophosphate of lime" is criticised by Dr. Sambuc (*Journ. Pharm.*, April 15, p. 411) on the ground that it is an error to consider them to be soluble double salts in which the phosphate employed retains its primitive condition in the presence of the added acid. On the contrary, Dr. Sambuc states that the phosphate is decomposed, whether it be dicalcic or tricalcic, monocalcic phosphate being formed, together with calcium lactate, chloride, or citrate, as the case may be. If this be correct, the patient, in order to take one gramme of the monocalcic phosphate, would have to swallow also one-half gramme of calcium chloride or a corresponding quantity of one of the other salts,—a proportion that, considering the freedom with which these preparations are sometimes taken, can hardly be desirable. In order to meet this objection, Dr. Sambuc proposes to use gummic acid, obtained by decomposing Senegal gum with hydrochloric acid and separating by dialysis, and states that when this is added to freshly-prepared dicalcic phosphate it combines with part of the lime, soluble monocalcic phosphate being formed, together with calcium gummate, which, being practically a regeneration of the gum, is not objectionable. As ordinary gum contains, in combination with gummic acid, lime, potash, and magnesia equal to about 1.75 per cent. calculated as calcic oxide, one hundred grammes should, according to this theory, be equal to the solution of ten grammes of dicalcic phosphate. But, in addition to this, it has been shown by Messrs. Lefort and Thibaut that natural gum arabic will dissolve 1 to 1.1 per cent. of bicalcic phosphate, possibly in consequence of the presence of some gummic acid not in combination, so that the total solvent power may be somewhat greater.—*Pharmaceutical Journal and Transactions*, April 30, 1887.

TREATMENT OF ARTERIO-SCLEROSIS.

Huchard recommends the following:

℞ Aquæ destill., ℥ixss;
Potass. iodid., ʒiiss;
Ext. aqueos. opii, gr. iss.

Dose.—2 to 3 teaspoonfuls daily.

When bronchitic complications are added the following may be used:

℞ Aquæ destill., ℥ixss;
Potass. iodid., ʒiiss;
Tinct. senegæ, ʒiiss;
Tinct. lobeliæ, ʒiiss;
Ext. aqueos. opii, gr. iss.

Two or three teaspoonfuls daily.

—*Les Nouveaux Remèdes*, No. 8.

The Therapeutic Gazette

EDITED BY
HORATIO C. WOOD, M.D.,
AND
ROBERT MEADE SMITH, M.D.,
PHILADELPHIA.

DETROIT, MICH., July 15, 1887.

GEO. S. DAVIS, Medical Publisher, Box 470.

SUBSCRIPTION RATES FOR 1887.

(Journal increased to 72 pages.)

THERAPEUTIC GAZETTE (postage included).....$2.00
THERAPEUTIC GAZETTE with MEDICAL AGE.... 2.50
THERAPEUTIC GAZETTE with AMERICAN LANCET 3.25
THERAPEUTIC GAZETTE with AGE and LANCET. 4.00

Foreign subscriptions may be ordered through our agent in England, Mr. H. K. Lewis, Medical Publisher and Bookseller, 136 Gower street, London. Price 10s. Remittances may be made either by Postal Order or Stamps.

Price to Foreign Subscribers direct (postage included) $2.50 (10 shillings). English postage stamps received on remittances.

Editorial communications should be addressed 1925 Chestnut Street, Philadelphia. Business communications should be addressed to the publisher.

Leading Articles.

THE IODOFORM QUESTION.

ONE would think that iodoform had been long enough before the medical public to have thoroughly established its status. Nevertheless, in many points we find the greatest diversity of opinion as to the value or even harmlessness of this remedy. On no point, perhaps, is there greater uncertainty than as regards the local application of iodoform in the treatment of tubercular deposits.

If the literature of this subject is examined we will find on the one hand numerous authors denying totally any special action of iodoform on the tubercular process; others, while perhaps admitting a favorable influence in preventing the return of the disease after total excision of the tubercular tissue, limit the action of iodoform to this alone. It is evident that if we restrict the value of iodoform to such cases as these its action cannot be regarded as specific, but merely as assisting the primary healing of the wound. On the other hand, a number of authors, led by Mosetig-Moorhof, go so far as not only to attribute specific antitubercular action from direct contact of iodoform, but even attribute to the odor of this drug specific antitubercular properties. This contradiction is without doubt attributable to the great difficulty attending any thorough application of this drug. As an illustration of this we need only recall that the failure to heal, often seen in the treatment of tubercular ulcers and fistulæ from the application of iodoform, is not to be attributed to the lack of action of this drug, but to the difficulty in procuring thorough contact between it and all the various tortuous passages of the fistulæ.

Considerable light has been thrown on this subject by a communication published by Prof. Bruns in the *Therapeutische Monatshefte* for May, 1887. He calls attention to the fact that the progress of cold tubercular abscesses treated by means of iodoform injections should offer conclusive proof as to the value or worthlessness of iodoform. He relates the progress of fifty cases treated in this manner in his clinic. The method of treatment was to aspirate the abscess under antiseptic precautions, and then to inject through the aspirator-needle a ten per cent. mixture of iodoform, with equal parts of glycerin and alcohol, and to close the opening by means of iodoform collodium. His general experience was that this operation was followed by no local or general reaction, with the exception of a single instance where slight symptoms of iodoform-poisoning were observed. As a rule, in small abscesses a single injection serves to produce cure and gradual disappearance of the disease within one to two months. Generally, however, two to three injections were necessary, which were performed at intervals of three or four weeks. In such cases several months were required for cure, and in several cases a fistula formed to the abscess. This, however, Prof. Bruns does not regard as a serious complication, since the abscess evacuates itself through this fistula, and ultimately heals. Of the fifty-four cases which were treated by this manner forty were healed, and among them a number of abscesses from which between five hundred to one thousand grammes of pus were evacuated.

When one thinks how extremely difficult it is to obtain a cure of cold abscesses by any method, this large percentage of cures is very striking, and when it is further remembered that a tubercular abscess membrane and often tubercular bone remains behind, it seems almost warrantable to attribute with the author to iodoform a specific antitubercular action, for it is evident that the action of the iodoform does not depend either upon caustic de-

struction of the tubercular tissue or through exciting a sufficiently strong inflammatory process to accomplish its removal. It seems therefore warrantable to attribute the results to the prolonged and close contact of the iodoform with the inner wall of the abscess and of the consequent destruction of the tubercular tissue. To obtain some light as to the exact method in which the iodoform produced its action, Prof. Bruns opened a number of cold abscesses at different intervals after the injection of iodoform, and partly or totally extirpated their walls in eight cases, whose tubercular nature was clearly proved, and subjected them to microscopic examination. While no full details of the examination are given, Prof. Bruns states that the first change which follows as a result of the iodoform treatment is the disappearance within a few weeks of the tubercular bacilli from the walls of the abscess, while the characteristics of tubercular tissue give place to normal granulation-tissue. He therefore attributes the cure to the destruction of the bacilli through the application of iodoform.

ANTIPYRETICS.

AT a recent meeting of the Association of American Physicians the subject of antipyretic administration was discussed *in extenso.*

In opening the discussion, Dr. H. C. Wood advanced the following propositions :

First.—Fever is a disturbance of calorification in which, through the nervous system, heat-dissipation and heat-production are both affected. If there be a fever which is produced by a direct action of a poison independently of the nervous system, we have at present no proof of its existence.

Second.—That heat-production is regulated by a nervous apparatus, our knowledge of which is still imperfect. There is certainly an inhibitory centre which depresses or controls the production of heat. It probably does this by acting on the trophic cells of the gray matter of the spinal cord. It is also probable that there is a centre which when excited increases tissue-change, but its existence has not been absolutely proven.

Third. — Heat - dissipation is regulated through the vaso-motor nerves, so that vaso-motor paralysis is followed by an enormous loss of animal heat, and under unfavorable circumstances by death from cold.

Fourth.—Drugs may lower bodily temperature in health or in fever by increasing heat-dissipation.

The facts which he stated as demonstrating the truth of these propositions appeared to be accepted by all the members present as definite and positive, excepting in that Professor Welch, of Johns Hopkins University, stated that he believed that the experiments of Aronsohn and Sachs had established the existence of accelerator heat-nerves, and after the discussion Dr. Wood acquiesced in this.

Almost all the physicians who took part in the discussion were in accord in believing that the modern antipyretics, such as antipyrin and antifebrin, are in most cases of fever efficacious in reducing temperature, and that when properly used they do not affect the general strength or the force of the circulation ; and whilst they are entirely devoid of any power in controlling the course of specific fever, they often do good by quieting the pain, promoting sleep, and overcoming restlessness through the reduction of temperature.

Almost all the speakers who claimed to have experience with the cold bath appeared to believe that its action was more favorable than was that of the antipyretic remedy. It was suggested by Dr. Wood that the cold bath, acting as a powerful stimulant to the immense mass of the peripheral nerves which reach the surface of the body, probably has an action on the organism apart from the mere obstruction of heat, and that it may be much of its soothing influence is the result of this peripheral stimulation.

The difficulties which surround the use of water as an external refrigerator agent are such that, at least in this country, most practitioners will probably prefer antipyretic drugs, although the latter are probably of inferior value.

Dr. John Guitéras, who practised for a long time in the extreme southern parts of the United States, stated as the result of large experience that in the long-continued fevers of those sections antipyrin, whilst capable of producing a temporary influence, had no power in controlling the disease, and often seemed to lose its influence ; that in a very large proportion of cases in which he had been called in consultation the best results were achieved by withdrawing the antipyretic and substituting the cold bath, which seemed not only to temporarily affect the fever, but to have some influence in subduing the disease.

DIARRHŒA OF CHILDREN.

AS the season of the year approaches in which diarrhœas are especially fatal in children, we feel it not improper to call the attention of our readers to a remedy which, though used by some practitioners, is, we think, still neglected by many of the profession. We refer to the phosphate of sodium. In the summer diarrhœas connected with a lack of digestive power, in which the stools are either clay-colored or habitually greenish, phosphate of sodium often brings a favorable response when the ordinary remedies for diarrhœa seem to irritate rather than do good. In nursing children it may be given in the milk, 10 grains of it in each bottle, or it may be given after eating, dissolved in a little water. It should be administered always in repeated small doses and not in a single large dose. Where there is habitual constipation, with occasional attacks of diarrhœa in young children, it is especially serviceable. It probably has some distinct specific action upon the glandular organs of the intestinal tract.

Another treatment of diarrhœa to which we want to direct the reader's attention anew, is the use of the cold bath. Our own experience has convinced us of the truth of the original affirmation of Dr. Comegys, of Cincinnati, that in the diarrhœas occurring in young children in intensely hot weather with more or less pronounced elevation of the bodily temperature, the cold bath will often suffice for a cure, and will often bring relief when all other measures fail. It should be given as often as the child's temperature rises; in rare cases once in every three hours. In other cases two or three times a day. The water should be of a temperature not above 80°, and the immersion should be sufficiently long to produce a distinct effect. Properly managed, these cold baths we think of inestimable value in the treatment of those forms of summer infantile diarrhœa which are the outcome of heat.

GASTRIC ULCER.

ULCER of the stomach is probably a much more frequent disorder than is generally recognized. On the other hand it probably is often believed to exist when not present. Our own experience has led us to think that the positive diagnosis as to its existence or non-existence is in some cases impossible. It may be simulated by chronic gastric catarrh or by neurosis of the stomach. Pain after eating, with vomiting, and great epigastric tenderness are very common in hysterical women, especially in girls shortly after puberty. The absence of blood from the vomit is not of as much importance from a diagnostic point of view as appears at first sight. Hysterical vomiting is not rarely accompanied by slight or even more pronounced hæmatemesis, and we have seen fatal ulcer of the stomach without hemorrhage, and, indeed, without any history of vomiting. Gastric ulcer is of course not infrequent in young hysterical girls, but that the gastric symptoms are often not due to any stomachic ulceration is proven by their occasional sudden disappearance.

Our own experience is that in many of these neurotic cases a quarter of a grain of nitrate of silver with a grain of hyoscyamus, accompanied by soft diet, is efficacious. If, however, it fail to do good in the course of a very few weeks, its use should be abandoned, and the treatment be that of hysteria, with a use of diluted nitro-muriatic acid at meals.

In a recent article in the *Medical Press* Dr. W. H. Pearse calls attention to the fact that many of these cases do best when their eccentricities of diet are given full swing. If the patient prefers smoked and salt fish, salt meats, pickles, onions, or even Dutch cheese, he allows the article to be taken with asserted good results. A favorite article with him seems to be one which is not much used by the Anglo-Saxon race in America, namely, "potatoes with vinegar." Whether by this is meant the potato salad beloved by our German brethren or not, we do not know.

"DRUMINE."

UNDER this title our readers will recollect that we called attention to what was claimed to be an alkaloid found in *Euphorbia Drummondii* by Dr. John Reid, of Melbourne.

In the notices in which we called attention to this alleged discovery we expressed ourselves as doubting the accuracy of Dr. Reid's statements, and alluded to the entire failure at the hands of Dr. Ogsdon, experimenting with the article obtained directly from Dr. Reid, to obtain any anæsthetic properties whatever.

From articles published in the *Pharmaceutical Journal and Transactions* for June 18, 1887, we learn that our scepticism is supported by a similar failure in the hands of Mr. W. H. H. Jessup, who tested the article

also procured directly from Dr. Reid both by injecting subcutaneously and when applied to the eye, with absolutely negative results. Chemical examination also showed that the solution gave no indication of the presence of any alkaloid. In the same number of the *Pharmaceutical Journal and Transactions* is a letter from Mr. Tanner, who found that the so-called alkaloid was entirely insoluble in water, dilute acetic acid, alcohol, ether, and chloroform, but soluble in dilute hydrochloric acid, from which it was reprecipitated on the addition of ammonia in excess. The hydrochloric solution gave no precipitate with the usual tests for alkaloids, and when gently ignited on platinum foil but little charring took place, and a considerable grayish residue, soluble with effervescence in hydrochloric acid, and answering in characters and tests to calcium carbonate, was obtained. It afforded no indication of the presence of nitrogen. Mr. Tanner advances further proof to show that the substance supplied under the name of "drumine" consists mainly of calcium oxalate. It would, therefore, appear that if an alkaloid is present in the plant operated on by Dr. Reid, his method of extraction fails in obtaining it, while it is well calculated to furnish nothing more than calcium oxalate. It might also be added that the agents selected by Dr. Reid for the supply of this so-called alkaloid having found it "unsatisfactory," have declined any further supply of the article at present.

Reports on Therapeutic Progress.

AN EXPERIMENTAL STUDY OF THE EFFECTS OF PUNCTURE OF THE HEART IN CASES OF CHLOROFORM NARCOSIS.

At a recent meeting of the Medical Society of the District of Columbia Dr. B. A. Watson, of Jersey City, read a paper on the above subject.

The results of sixty experiments on dogs were given in detail. The experiments consisted briefly in producing death by chloroform inhalation, and then within from one to three or four minutes an aspirating needle was introduced into the heart through the chest-walls, the attempt being to reach the right ventricle. In the first fifty cases the chloroform was administered rapidly and air was excluded as far as was possible. In the last ten the chloroform was administered slowly, and with a large proportion of air. The first forty animals had already suffered some severe traumatic injury, while the last twenty were perfectly healthy animals. The punctures made in these sixty experiments were as follows: Right ventricle, 38; left ventricle, 6; right auricle, 6; superior vena cava, 3; inferior vena cava, 2; apex of the heart, 2; and not stated, 1. The resuscitations were as follows: after puncture of the right ventricle, 9; right auricle, 1. The first forty experiments gave only four recoveries, while the last twenty gave six. In only one of the sixty cases did the heart fail to respond to puncture, and in this instance the use of the needle was postponed for four minutes after the cessation of the heart's action, and one minute after breathing had stopped.

Should the puncture be carried into one of the cavities of the heart in order that blood may be abstracted? In chloroform narcosis the heart is found in diastole, and the veins in the lungs are greatly distended with blood. It may therefore theoretically be assumed that blood may be advantageously drawn from the right side of the heart. The author was assured that this procedure was practical and advantageous.

The only deaths during these experiments which could be attributed directly to the puncture were those in which the needle penetrated the vena cava. In these cases there was profuse hemorrhage into the thoracic cavity. Punctures made into the auricle are sometimes followed by a flow of blood into the pericardium. Punctures into the ventricle are not attended with any hemorrhage from the interior of the organ, but there may be a few drops of blood from a wounded cardiac vein.

The following conclusions were reached:

First.—Puncture of the heart, especially of the right ventricle, stimulates muscular contractions, and may be advantageously applied in the treatment of chloroform narcosis.

Secondly.—The best results are obtained when abstraction of blood from the cavity of the ventricle is combined with the stimulating effects produced by the entrance of the aspiratory needle.

Thirdly.—The puncture of the right ventricle is a safer and more efficient operative procedure than the puncture of the right auricle.

In the discussion which followed the reading of this paper Dr. N. P. Dandridge, of Cincinnati, said the conditions under which the experiments were made were different

from those under which accidents usually occur in human beings. In the latter case the accident usually occurs after only a small quantity has been taken, and often early in its administration. The effect is probably due to a reflex effect upon the inhibitory action of the heart. In the experiments reported puncture was resorted to within one or two minutes after the cessation of the heart's action. In the accidents with chloroform it is not uncommon to have recovery after apparent cessation of the heart's action for a comparatively longer period. A large number of experiments are required to test the relative value of this procedure as compared with artificial respiration. The use of nitrite of amyl, and particularly with the subcutaneous injection of atropine, should be resorted to. This latter can always be done quickly, and has a stimulating effect upon the cardiac and respiratory centres.

Dr. John B. Roberts, of Philadelphia, said that the speaker, while he had shown the comparative innocuousness of the heart with a small needle, had also shown the danger of using chloroform as an anæsthetic in any cases, possibly cases of parturition excepted. His experiments have shown that it is more dangerous to puncture the auricle than the ventricle, which would naturally be suggested by the fact that the auricle has a much thinner wall.

Dr. T. J. Dunott, of Harrisburg, referred to a case in which the heart was twice punctured with an aspiratory needle, and blood drawn from the cavity of the heart. It was a case of dilatation of the heart with general dropsy, etc. The operation was performed by a homœopathic practitioner, under the idea that he was dealing with a case of dropsy of the pericardium. A large quantity of blood was removed, and for a time there was improvement. The symptoms again returned, and the operation was repeated with a fatal result.—*Journal of the American Medical Association.*

STRETCHING THE SPHINCTER IN APOPLEXY.

In the *Lancet* for May 21, 1887, Mr. John W. Teale reports the case of a lady, aged 64, who suffered greatly from constipation, had had several attacks of what she called angina pectoris, and lived in perpetual dread of having accumulations in the bowels, from which she had suffered. The routine treatment of mild alteratives, tonics, and aperients which Mr. Teale instituted proved a complete failure. The sphincter was found tightly contracted, and the rectum distended with hardened fæces. In her feeble health, shattered nerves, irritable heart, and albuminous urine, an operation seemed inadmissible. Repeated castor-oil enemata were consequently resorted to, resulting in considerable relief.

About a week later two injections were employed, which proved ineffectual, and she became very restless and excited, and her face commenced to twitch, increasing in violence until these twitchings amounted to violent convulsions. When Mr. Teale reached her he found slight but well-marked symptoms of paralysis of the left side of the face, and which gradually became more decided in character, extending to the left arm and leg; the pupils were regular, somewhat contracted, slightly sensitive to light. There was no stertor, but insensibility was complete. Every few minutes there was a convulsive attack, commencing with twitching on the left side of the face, extending gradually to the left arm and leg, and then becoming general over both sides of the body, and gradually relaxing without pursuing any definite order. On examining, per anum, hardened fæces could be felt floating in enema of soapy water and olive oil, which had been given, though the sphincter was so tightly closed that the finger could only be passed with difficulty. Availing himself of the state of unconsciousness present, Mr. Teale stretched the sphincter freely, and immediately the enema poured out, followed by offensive fæces. The convulsions continued as before; potassium bromide was given by injections and retained, and the urine, which became almost solid on boiling, was drawn off by the catheter. Consciousness did not return until the next day. For the next three or four days the urine had to be drawn off by the catheter. The amount of albumen soon became merely nominal. The patient slowly recovered.

For some days she misplaced names and words. The right side of the body soon regained power, the left more slowly, but remained markedly weaker than the right. In about three weeks she returned home, the bowels then acting easily and naturally without purgatives.

A year later the patient died. The writer thinks the operation lengthened her life for nearly a year, and also relieved her from suffering. The fact that prolonged constipation from any cause is an important factor in causing apoplexy, when the arterial coats are

degenerated, has long been recognized,—an argument, no doubt, for the early and effectual surgical relief of affections of the rectum, where they are found to exist.

COMPOSITION OF COW'S MILK.

The results of an experiment made primarily to determine the variations in the proportion of phosphoric acid occurring in the milk of the cow have been recorded by M. ANDOUARD (*Comptes-Rendus*, civ. 1298). The experiment was made on four cows, one of which was fed on pasturage, with the necessary complement of hay and bran, while the others were fed with beets, swedes, potatoes, legumes, etc. It was found that the phosphoric acid in the milk underwent a progressive diminution during the period of lactation extending to 10.46 per cent. on the initial weight in the case of the cow fed on pasturage, and ranging from 14.91 per cent. to 45.39 per cent. on the initial weight in the cases of those fed on roots, etc. It was also observed among other things that the butter, and especially the sugar, also diminished in quantity during the same period, whilst with respect to casein the milk from two of the cows contained an increasing proportion, while that from the other two contained a decreasing proportion. The paper does not contain any statements of absolute quantities.—*The Pharmaceutical Journal and Transactions*, May 28, 1887.

SOME POINTS IN THE SELECTION AND ADMINISTRATION OF ANÆSTHETICS.

At a meeting of the West London Medico-Chirurgical Society, held May 6, DR. HEWITT read a paper upon the above subject, and said that he wished to limit his remarks to the consideration of the following points: 1. The best method of administering nitrous oxide and ether, either in succession or in combination. 2. The prevention of vomiting during or after the administration of an anæsthetic. 3. The danger of inducing general anæsthesia in persons so suffering from obstructive dyspnœa. 4. The possibility of dangerous symptoms occurring from the administration of opium or morphine prior to chloroform, ether, or other anæsthetics. He exhibited an apparatus which he had used for three years in hospital and private practice. It consisted of a Clover's portable ether-inhaler fitted with a special form of face-piece, and with a bag capable of holding two gallons of gas. By means of this apparatus any desired combination of nitrous oxide and ether could be given. The amount of gas in the bag was always sufficient, when administered with the face-piece shown, to anæsthetize a patient before gradually admixing the ether vapor; and the whole apparatus was portable, and could be changed before entering the room in which the operation was to be performed. By means of this apparatus there was no sudden transition from nitrous oxide to ether, as when face-pieces were changed during the administration. Vomiting could be prevented by rapid and deep anæsthesia. In a large number of cases he had given a half-grain of cocaine in half an ounce of water shortly before the administration of an anæsthetic. This was done with the object of lessening the sensibility of the gastric mucous membrane. Vomiting after anæsthetics was best prevented by keeping the patient upon his side, and by moving him as little as possible. The danger of inducing anæsthetic sleep in persons suffering from obstructive dyspnœa was then considered. Patients in this condition were dependent for their existence upon an increased activity of their respiratory mechanism, and failure of respiration was very likely to ensue under chloroform or ether.—*The Lancet*, May 28, 1887.

PHYSIOLOGICAL ACTION OF REMIJIA FERRUGINEA.

According to the Paris correspondent of the *British Medical Journal*, June 4, 1887, at a recent meeting of the Biological Society MM. PINET and DUPRAT communicated a note on the physiological action of remijia ferruginea. The preparations employed in the experiments were a watery and a hydro-alcoholic extract of the root of the plant. Both extracts, when tested with litmus-paper, showed a decided acid reaction. The hydro-alcoholic was much less active than the watery extract. The experiments were made on frogs weighing thirty grammes, and the dose was the quantity contained in three divisions out of twenty in a Pravaz syringe. A quarter of an hour after an injection into one of the hind feet, the animal was found to show general hyperexcitability, with considerable increase of respiratory movement and of cardiac pulsation. In some of the animals the energy of the ventricular contraction was so great as to produce asphyxia, which continued throughout the entire duration of the intoxication. The heart was found to be abnor-

mally red. The electrical contractility of the muscles remained intact. Ligature of the iliac artery on one side, with injection of the extract into the opposite limb, produced no difference in the result. Section of the lumbar nerves on one side, with injection into the opposite limb, caused convulsions only on the side on which the innervation remained intact. When the spinal cord was divided below the medulla, no convulsive action took place. Ablation of the cerebral hemispheres in no way affected the phenomena above described. MM. Pinet and Duprat conclude that remijia ferruginea acts chiefly on the medulla.

BERGEON'S METHOD OF TREATING PHTHISIS.

At a recent meeting of the Association of American Physicians Dr. E. T. Bruen read a paper on the above subject, in which he stated that since February last he had employed Bergeon's method of treatment in sixty-one cases. Forty-four of these cases had been benefited, but of these only three appeared to regain full health. Two of these were cases of incipient phthisis, with apparent consolidation of the apex of the right lung. In one of these cases the bacillus tuberculosis was not found, although five examinations were made. In the other case the bacillus was found. In these cases the apparent recovery had been associated with a decided increase in weight. He believed, however, that the disease was simply latent. The third case was one of broncho-pneumonia. In all the other cases the lesions were more or less advanced, with the presence of cavities and profuse expectoration. In the fifteen cases in which a negative result was obtained the treatment in some was followed by temporary benefit. The good results had consisted in lessening of the expectoration, diminution of the cough, lowering of the temperature, and suspending of the night-sweats. In most of the cases there was a diminution of from fifteen to twenty beats in the pulse, and a diminution of half a degree in the temperature during the administration of the gas. Even in those cases which were benefited, and in which the temperature had been brought to normal, there would be during the progress of the treatment occasional outbreaks, with a return of the fever and the other symptoms. These, however, disappeared under a continuance of the injections. In order to determine the effect of the treatment on the bacilli, Dr. E. O. Shakespeare made a number of examinations during the progress of the cases. There had been no diminution in the number of the bacilli. It was, however, thought that in those cases where the treatment had been continued for some time the reaction of the bacilli to the staining fluid was less marked.

Two cases had died. In one of these an autopsy was made. This case had been under treatment for two months. The walls of the cavity were moderately smooth and firm, but there was no tendency to cicatrization. The results were of a decidedly negative character.

In most of the cases a solution made by the addition of five grains each of sodium sulphide and sodium chloride to a pint and a half of water was the solution employed. In some cases the strength of the solution had been gradually increased, but where no benefit had been obtained from the weak solution the stronger solution did not act with any better results. In cases of diarrhœa his experience had been unfavorable, except where the gas was given in very small quantities. Chronic peritonitis was a contraindication to the use of this plan of treatment. In about one case in every ten he had observed the reaction of sulphuretted hydrogen when a paper treated with acetate of lead had been applied to the mouth.

Bergeon's method is chiefly valuable in those cases attended with bronchial catarrh. He had had very little good effect in those cases where there was thickening of the lung without much catarrh. The speaker feared that the trouble and detail necessary to the successful application of this method and the limitations of its power would cause it to be set aside for other therapeutic measures.

Dr. F. C. Shattuck, of Boston, also presented some clinical notes on the same subject. The speaker had treated only seven cases by this method. They were in an advanced stage of the disease. He had seen such improvement follow careful dietetic and hygienic management that he had not much confidence in the results claimed for special methods of treatment in these cases. Any new method of treatment will often have an apparently beneficial effect through its influence on the mind even in those cases which are incurable. Six of the cases treated suffered with phthisis, and five were in an advanced stage of the disease. One was a case of chronic bronchitis with asthma and emphysema. Four of the patients suffered with more or less pronounced collapse from the use of the injections. Nausea, vomiting, and diarrhœa oc-

curred in several cases. In one case, although the patient was weak, no local or general ill effect was observed. In another case the treatment was continued four weeks with no ill effect. The only benefit obtained was a diminution of the expectoration. In the case of asthma and chronic bronchitis, thirty-four enemata were given. The improvement was no more rapid than on a previous occasion when the patient had been treated in the same general way with the exception of the gas. He presented the following conclusions:

1. Toxic symptoms may follow the injection of sulphuretted hydrogen gas; these are nausea, vomiting, general depression, collapse, and perhaps headache.

2. Strong artificial solutions of sulphuretted hydrogen gas with carbonic-acid gas are apt to cause abdominal discomfort. The risk of this is diminished by heating the solution of the former gas.

3. This is not by any means a specific. If useful at all it is only as an auxiliary to the more usual methods of treatment.

4. The only benefit which we have seen that could be fairly attributed to the enemata was a diminution in the amount of the expectoration.

In conclusion, the author stated that the impression which he had formed was that the good results which had unquestionably followed this method of treatment were attributable in large part to the stimulation induced by the employment of a novel method of treatment which makes the patient feel that something is being done for him.

Dr. William Pepper, of Philadelphia, stated that he had, with the assistance of Dr. J. Crozier Griffith, employed this method in twenty-four cases in which the treatment was continued, on an average, twenty-five days. Other treatment was frequently combined with the use of the injections. A daily temperature record was kept in sixteen cases: in four there was more or less reduction; in eleven there was no appreciable effect; in one the temperature increased, but this was probably a coincidence. In no case was the temperature brought from a febrile to a continuously normal condition. The fall was not more than is seen in similar cases under other methods of treatment.

In twenty cases in which the weight was recorded there was in eight more or less gain. Eight pounds in thirty-seven days was the greatest gain. In six cases the weight remained stationary, and in six it was diminished.

The improvement in cough was not marked. The expectoration was somewhat diminished in four out of twenty-four cases. Search was made for the bacilli in thirty cases, and they were found in twenty-seven. In eleven cases the examination was repeated, and only in four was there any apparent decrease. Cases of night-sweats were not numerous. In one they were checked and in seven improved. Physical examination showed no improvement in a single case. The enemata had a decided hypnotic influence in three cases. The only unpleasant symptom of any real moment was colic. This was complained of in eleven out of twenty-four cases. Three others suffered so much that the treatment could not be repeated. The colic was not often controlled by giving smaller quantities of the gas, nor did it seem to be influenced by the slowness of the injection. This method of treatment is seldom of real benefit by relieving certain symptoms.

Dr. H. C. Wood, of Philadelphia: After studying the cases treated by this method he came to the conclusion that it was of a certain amount of benefit. He saw that the method of employing the gas presented many objections. The sulphuretted hydrogen should accomplish the same results when absorbed by the stomach as when taken up by the large intestine. He has, therefore, administered the sulphuretted hydrogen gas in carbonic acid water. Water at the ordinary temperature takes up two or three times its volume of sulphuretted hydrogen. He thinks that this is a distinct addition to pulmonary therapeutics. He has tried it in certain cases with benefit.—*The Medical Record*, June 18, 1887.

THE TREATMENT OF SCROFULOUS GLANDS.

All surgeons are familiar with the slowly suppurating cervical and other lymphatic glands occurring in strumous children, which, while tedious and insidious in their course, generally after months or years of suffering end at the best in elevated or depressed cicatrices and unsightly scars. We have already referred to the method introduced by Prof. Verneuil, of the treatment of such conditions by drawing off the pus and injecting an ethereal solution of iodoform. In the *New York Medical Journal* for June 25 is an article by Dr. H. C. Rogers on the subject. He states that he has treated nine cases by this method. The swelling gradually disappeared in from three weeks to two months. The plan

is first to evacuate the pus by aspiration. To do this a large-sized trocar should be employed, handling the parts as little as possible. As soon as the liquid becomes slightly blood-stained the iodoform solution should be injected. Dr. Rogers's experience usually is that one injection will be sufficient, and he employs the injection even where he is unable to find pus, but where the centre of the swelling is soft and in a condition to break down. In such cases his plan is to inject from 10 to 20 minims of a two per cent. solution of iodoform in ether. In addition to the local treatment he employs internal medication, and speaks in the highest terms of the compound syrup of trifolium, which is a mixture containing iodide of potassium combined with the vegetable alteratives, red clover, burdock-root and prickly-ash bark, stillingia, poke-root, and berberis aquifolium, each ounce containing eight grains of iodide of potassium. Together with this Dr. Rogers uses iodide of arsenic, bichloride of mercury, sulphide of calcium or iron, to build up the constitutions. Instead of ether, glycerin may be substituted as a solvent for iodoform, ten parts of iodoform being mixed up with one hundred parts of glycerin.

MOLLIN.

LIEBREICH writes as follows concerning this new substance in the *Therapeutische Monatshefte*, Heft 4:

Under the name mollin we commonly understand a mixture of potassium soap and fat. The name itself does not inform us whether the substance is chemically one, or a mixture of substances of the same sort, or a preparation after a given formula, of ingredients prepared for the physician's use. We have as yet no name precisely describing mollin; we can only describe it as a potassium soap which contains seventeen per cent. of excess of fats, which are the ordinary soap-fat, tallow, and cocoanut oil, to which glycerin is added. The mixture is white and smeary, and strongly alkaline in reaction. This salve is very easily made, for cocoanut oil saponifies very easily when cold, and induces the same process in other fats mixed with it.

Mollin may be prepared as follows: A mixture of 50 parts cocoanut oil and 50 parts lard is treated with a solution of caustic potash, 20 parts potash and 4 water, and allowed to stand an hour. In this time saponification takes place. The mixture may be also warmed. This soapy compound is increased by the addition of seventeen per cent. of fat, previously melted and refined. The process of saponification is slower and less complete when fat is added when the first mixture of cocoanut oil and lard with the alkali is made. To mollin so made glycerin also may be added. The solid condition of the product is dependent upon the property of the cocoanut oil to harden readily. The process may be carried on without heating if concentrated caustic potash solution is used, a fact familiar to all soapmakers. The suggestion for the manufacture of mollin was given by Unna in his remarks upon soaps containing an excess of fats. The therapeutic uses of mollin will appear as it is used more extensively.

All glycerin fats show a marked tendency to become rancid, especially when mixed with soaps. It is a well-known fact that when any error in the technique of soap manufacture is made, the importance of securing the saponification of all fats is at once evident from the instability shown by soaps containing free fat. The idea that the excess of an alkali can be neutralized by fat is erroneous, for we frequently find soaps which have been kept for years, and yet contain free fat in the presence of free alkali. The combination of the fat contained in a soap with a free alkali can only be properly performed during boiling. Neutralization is only possible when fat is decomposed by the alkali, a process which takes considerable time and a high temperature for its accomplishment. The writer states that he has often previously observed that the free alkali in a soap is extremely hard to neutralize, and that a neutral soap may be best formed by separation by centrifugal force. After the alkalies of a soap have combined, the central mass or real soap will be separated by centrifugal force, and the lye removes in still greater amount the potash and impurities. But this form of manufacture is possible only for sodium soaps. With potassium soaps chlorate of potassium will not combine with the fats, while sodium chloride forms a sodium soap. A good potassium soap then can only be made by the most careful manufacture, and will contain free alkali. It is hardly possible by direct combination to obtain a neutral potassium soap.

In mollin, also, which is a cocoanut-oil potassium soap, the free alkali is not entirely neutralized, but by the addition of the excess of fat the action of the alkali is much lessened, both by the reduction of its percentage and by the local protection against its influence

which the fat affords. The choice of cocoa fat is not without detriment. This fat contains more than those of the glycerin series of the lower fatty acids, and a potassium soap made with such fat contains a considerable amount of the salts of these fatty acids. The fact that these substances may exercise an irritating influence upon the skin should lead to caution in preparing and ordering mollin, as the per cent. of fat may be changed at pleasure; the ordinary *sapo kalinus* of the (German) Pharmacopœia may prove a better material for such preparations than cocoa fat.

The following formulæ give useful and well-combined mixtures:

Saponis kalini, 100 parts;
Add
Adipis (melted at gentle heat), 50 or 80 parts;
Glycerini, 10 parts.

The consistence of this mass is not as solid as that of mollin made with cocoa fat.

The greater the amount of soap added in this mixture the more easily will the substance be washed from the skin, and by such removal of the soap under all circumstances the skin will be covered by fat. The danger that mollin will become rancid through the fat added in its preparation suggests the substitution of lanolin for the cocoa fat. The consistence of the resulting mixture is the same. It may be prepared after the following formula:

Saponis kalini, 100 parts;
Lanolini, 50 or 100 parts.

It is extremely useful in many cases in which an alkaline soap cannot be used, to mollify the action of the alkali by the addition of fat. It must, however, be remembered that such soap or ointment has a pungent taste and irritating action, and all who prepare such compounds should be instructed that they are not to be used upon wounds. The same prohibition applies naturally to mucous membrane. The applicability of such caution to mollin is evident when we remember that mollin is a preparation of soap.

We shall reach better and more accurate results and more exact information if those who use mollin will adhere uniformly to the formulæ given, thereby giving a constant basis for judgment.

A NEW AND IMPERVIOUS DRESSING.

Photoxylin, a substance in use among photographers, was recommended some time ago by Dr. Krysinski as a suitable material for mounting microscopic specimens, and more recently still it has been utilized by Prof. Wahl, of St. Petersburg, as a substitute for collodion in surgical practice. A five per cent. solution in equal parts of alcohol and ether he finds preferable to collodion, as it adheres more firmly to the skin, not being so easily rubbed off in washing. It is absolutely impervious to liquids, and exerts a perfectly even compression on the tissues. In out-patient practice Prof. Wahl finds that, after small operations, such as the extirpation of glands, the application of photoxylin solution enables him to dispense entirely with voluminous antiseptic dressings; also in plastic operations on the face, and in operations in the neighborhood of the male genital organs, such as those for the radical cure of hernia and castration, where it is very difficult to prevent the urine soaking through antiseptic dressings. Prof. Wahl, after carefully arresting all hemorrhage, closes the wound with sutures and gelatin plaster, and then covers the whole with a thin layer of wool soaked in a solution of photoxylin. This, it is stated, will remain eight or ten days, entirely resisting all the effects of moisture. Even in laparotomy, extensive dressings may, he believes, be dispensed with by painting a solution of photoxylin over the wound with a brush, or by the application of a layer of cotton-wool soaked in the same liquid. Photoxylin appears to be unknown in this country. It was introduced by Messrs. Mann, of St. Petersburg.—*The Lancet*, June 18, 1887.

MECHANISM OF THE THIRD STAGE OF LABOR: THE SEPARATION AND EXPULSION OF THE MEMBRANES.

At a recent meeting of the Obstetrical Society of London Dr. F. H. Champneys read a paper with this title, part of which has already been laid before the readers of the Gazette. The views that had been expressed on the subject amounted to four: 1. The peeling off of the membranes by the traction of the descending placenta. 2. Separation by effusion of blood. 3. Wrinkling of the membranes by uterine contraction and retraction. 4. Separation of the lower pole of the ovum by retraction of the lower uterine segment. The second of these was dismissed on the ground that the quantity of blood lost in an ordinary labor was too small to produce this result, and that, with the usual eccentric implantation of the placenta, this mechanism would fail of its purpose. He

criticised the expression "weight of the placenta," as having influence on the mechanism in the recumbent attitude, and also the expression "leaving (the process) to nature," as applied to its course in the recumbent attitude. He explained the natural process as follows: 1. Separation of the lower pole of the ovum by retraction of the lower uterine segment during the "premonitory stage" of labor; this required a complete "bag of waters." 2. Wrinkling and partial separation of the membranes by diminution of the internal surface of the uterus; this required some escape of the waters. 3. Peeling off of the membranes by the traction of the descending placenta; this required the evacuation of the uterus. The rupture of the membranes at the proper time was an integral part of the normal process. The first stage in the process seemed calculated to prevent a very common defect,—namely, the adhesion of the membranes round the lower uterine segment.—*The British Medical Journal*, June 11, 1887.

ACETONE-CHLOROFORM—A NEW DISCOVERY.

An interesting communication (an abstract of which appears in the *Monthly Magazine of Pharmacy*) has just been laid before the Académie des Sciences by M. ENGEL, in which he describes an entirely new body lately discovered by M. Willgerodt, and designated by the not very satisfactory name of acetone-chloroform. As, from a private source, we understand that the compound in question has already been tried tentatively with regard to its effects upon the animal economy, with the result that it is said to be non-poisonous when taken internally, but lowers the animal temperature when above the normal limits, and also exerts a mild narcotic action, we trust that further researches will be instituted upon a systematic plan.

The therapeutic properties of "acetone-chloroform" should be investigated without loss of time, as, if it really possesses the properties of a sedative and an antipyretic, it can scarcely fail to become a practically valuable addition to our list of new drugs.

It is prepared, we are informed, by digesting, at a slightly-elevated temperature, a mixture of anhydrous chloroform and acetone in equivalent proportions, and in the presence of a little hydrate of potassium. Combination takes place without difficulty, and the principal reaction seems at first sight to be one of simple addition in accordance with the following equation:

$$\underset{\text{Chloroform.}}{CHCl_3} + \underset{\text{Acetone.}}{C_3H_6O} = \underset{\text{New Compound.}}{C_4H_7Cl_3O}$$

But the latter body enters into combination with the alkaline base already mentioned as being necessary to the reaction in question, forming a species of salt therewith; it thus possesses distinctly acid properties, and in fact is described as an acid by the discoverer. At the same time it must be borne in mind that as yet no reliable details of the real constitution of acetone-chloroform are forthcoming, and we must wait patiently for the further development of the interesting problem here involved. There is, however, no occasion to accept too hastily the statement that "acetone-chloroform" is really an acid at all, without some stronger evidence in support than we have before us at this moment. Alcohols are, as we all know, quite capable of forming compounds with the hydroxides of the alkali-metals, and it appears to us that this latter observation has a particular bearing upon the case.

Butyric alcohol, $C_4H_{10}O$ (like chloroform itself for that matter), for instance, belongs to that numerous class of bodies which may be classified under the "marsh-gas type," CH_4, and of this alcohol there are or may be several isomeric modifications, as Lieben has conclusively shown. Into the details of these we cannot descend just now, but if we place in juxtaposition two formulæ of the simplest possible character, our meaning will be rendered more clear. Thus, if we replace by chlorine three atoms of hydrogen in

$$\left.\begin{matrix}\text{Butyric alcohol}\\ C_4H_{10}O\end{matrix}\right\} \text{ we shall obtain } \left\{\begin{matrix}\text{Tri-chlorinated}\\ C_4(H_7Cl_3)O\\ \text{Butyric alcohol,}\end{matrix}\right.$$

which, as our readers may observe, is of precisely the same composition as "acetone-chloroform."

The possible relations of the latter to marsh-gas itself may be exhibited in several ways, but a single example will be amply sufficient for our present purpose. Thus we have

$$\underset{\text{Methane, or Marsh-gas.}}{C\begin{Bmatrix}H\\H\\H\\H\end{Bmatrix}} \qquad \underset{\text{Butyric Alcohol.}}{C\begin{Bmatrix}CH_3\\CH_3\\CH_3\\OH\end{Bmatrix}} \qquad \underset{\text{"Acetone-Chloroform" (?).}}{C\begin{Bmatrix}CH_2(Cl)\\CH_2(Cl)\\CH_2(Cl)\\OH\end{Bmatrix}}$$

So much for the hypothetical chemistry of the new compound. We may return to the consideration of the subject from a pharmacological and therapeutical stand-point upon a future occasion. It is, however, important to bear in mind that the term "acetone-chloroform" is already commercially, and quite correctly, applied to the chloroform

now manufactured upon a considerable scale in Germany (and also in the United States. —Ed. W. D.) from the acetone derived from the distillation of wood and other substances. But this is merely ordinary chloroform, $CHCl_3$, or, to compare it with methane,—

$$C\begin{cases}Cl\\Cl\\Cl\\H\end{cases}$$

It therefore differs in no way from the chloroform ordinarily met with, except in the fact that it is prepared from acetone instead of alcohol.—*Western Druggist*, June, 1887.

MANIPULATION WITHOUT INCISION AS A POSSIBLE TREATMENT IN CERTAIN CASES OF STONE IN THE KIDNEY.

In the *Lancet* for May 21, 1887, Mr. William H. Bennett reports the following interesting case:

An unmarried woman, 30 years old, of a spare habit and nervous disposition, came as an out-patient at St. George's Hospital in September last, complaining of symptoms which led to the suspicion that she was the subject of a calculus in the left kidney. At the same time she presented several indications of "hysteria," and stated that she occasionally suffered from fainting attacks, which were quite unconnected with the symptoms on account of which she applied for treatment. Upon examining the abdomen, which was very thin, deep pressure over the left kidney caused considerable sharp pain, and threw the superjacent muscles into rigid contraction. The kidney could be distinctly felt and moved with the hand, and seemed of the natural size and form. Taking into consideration the hysterical tendency of the patient, it could not be decided, in the absence of any very marked abnormality in the urine, with the exception of a very slight deposit of mucus and pus, whether the case was really one of renal calculus or not. Seeing, however, the ease with which the kidney could be felt, partly by reason of the thinness of the patient, Mr. Bennett determined, as drugs afforded no relief, to insure complete relaxation of the abdominal parietes by the administration of an anæsthetic, and then manipulate the kidney as freely as possible, without previously exposing it by incision, with a view, if the case were one of calculus, to disturbing the stone, and, if it were not too large, perhaps bringing about its passage down the ureter, or, in the event of the symptoms being "hysterical," with the hope of producing a mental effect upon the patient sufficient to relieve her distress. She, however, declined the anæsthetic; the manipulation was attempted without its aid. The patient having been laid on her back upon a couch, the fingers of my left hand were dipped deeply into the abdominal wall over the kidney, the right hand being pressed forward into the loin. By a little management, the muscles being quite flaccid from the patient having become faint, the kidney could be felt quite easily between the two hands, and was kneaded as thoroughly as the circumstances allowed. The patient, although much discontented with the aching and tenderness which the operation seemed to have caused, was well enough to walk away almost directly afterwards.

Two days later she reappeared at the hospital in a more grateful mood, saying that, having suffered much discomfort for the rest of the day after the manipulation, she was seized as she was going to bed with a most acute pain in the affected loin and side of the abdomen. The pain lasted for about half an hour, during which she vomited twice. All at once an uncontrollable desire to micturate occurred, and the pain immediately ceased. No further pain followed, and there can be little doubt that a small calculus had made its way down the ureter into the bladder, although no evidence of its having passed *per urethram* was forthcoming. Moreover, it is quite possible that the manipulation had moved the stone from its resting-place in the kidney, and thus brought about its expulsion.

An isolated case like the above cannot be taken to necessarily prove much, since the passage of the calculus may have been a mere coincidence; at the same time Mr. Bennett is strongly disposed to attribute the result to the manipulation. This view receives some corroboration from a case in which the kidney was exposed and examined without the detection of a stone, although shortly afterwards an attack of renal colic was followed by the expulsion of a very small calculus, which had probably been disturbed during the exploration. Other similar cases have occurred. As bearing on the same point, it seems most probable that when relief has followed the exposure and manipulation of the kidney without the detection of a stone, the result has been due to an alteration in the position of the calculus, produced by the kneading to which the organ has been subjected. That calculi of *considerable size* may be overlooked both in the lumbar and com-

bined abdominal and lumbar operation for exposing the kidney when the organ is examined by the fingers only is certain, and it is equally certain that only stones of the smallest size can escape detection when the kidney is thoroughly explored by acupuncture,—an operation which has been at present associated with risks which are hardly more than problematic, and at all events less serious than the danger which exists of overlooking calculi of no small size when digital examination is alone employed. Manipulation of the kidney through the parietes without previous incision is possible in certain cases, the number of which is far larger than is generally supposed, when the abdominal walls are not too much loaded with fat, and the muscles have been completely relaxed by the administration of an anæsthetic. In conclusion, Mr. Bennett suggests that manipulation without incision is a proceeding worthy of trial as a treatment which may possibly prove of utility in certain cases of renal calculus, not too far advanced, as a means of changing the position of the stone and perhaps effecting its expulsion,—a possibility to our mind sufficiently strong to commend the process to the attention of physicians as an adjunct to the medical treatment of renal calculus.

BORACIC ACID IN THE TREATMENT OF LEUCORRHŒA.

From the excellent results which are yielded by boracic acid packing in chronic suppurating otitis, Dr. N. F. Schwartz (*St. Louis Courier of Medicine*, June, 1887) was led to employ it in a case of leucorrhœa which had resisted the most persevering use of the ordinary remedies. The experiment was successful within a fortnight, and the patient has remained well for several months since. Dr. Schwartz states that he has been equally successful in a number of other cases. His manner of using it is as follows: Having first irrigated the vagina with water at as high a temperature as can well be borne by patient, a cylindrical speculum is introduced, and the vaginal walls very carefully dried, first with a soft sponge and then with absorbent cotton. This done, boracic acid in crystals is poured into the mouth of the speculum, and pushed up against the uterus and vault of the vagina with a clean cork caught in a uterine sponge-carrier, sufficient acid being used to surround and bury the intravaginal portion of cervix, filling the upper part of vagina. A tampon of absorbent cotton is then firmly pressed against the packing, and held *in situ* until the folds of the vaginal walls close over it as the speculum is withdrawn.

This should be allowed to remain three or four days, or even longer, as after this time there still remain some undissolved particles of the acid, nor will the tampon seem at all offensive. The ostium vaginæ, if examined in twenty-four hours, instead of being besmeared with the leucorrhœal secretion or discharge, presents a clean appearance, and bathed in a watery fluid, which begins to appear several hours after the packing has been placed, and in his cases this was the only discharge noticed afterwards.

However, a second or even a third repetition may be necessary, but in none of his cases, numbering nearly a score, has he found more than a second packing called for, and in many one sufficed; and in no instance has its use occasioned pain, not even inconvenience.

THE STRING-DRAIN AS A SUPPLEMENT TO THE ORDINARY DRAINAGE-TUBE.

Dr. A. R. Jenkins proposes in the *Annals of Surgery* for May, 1887, as an adjunct to the drainage-tube, the introduction of one end of thirty or forty feet of rough string, highly hygroscopic, and completely aseptic, through the usual "Chassaignac drainage-tube," so that, when the last is placed in the wound, the string may be drawn through, from time to time, as will be explained hereafter.

The string may be of cotton, linen, or wool, that has been freed of fat and disinfected, for which purpose it is recommended that it be treated after the manner that V. Bergmann prepares his gauze,—by immersing the absorptive string for one hour in the following: Sublimate 1, glycerin 50, alcohol 100, water 150, warmed; then to be dried, and kept in hermetically-sealed glass jars; it will then hold one-third per cent. sublimate, and is very absorbent. The end of the string being passed into the tube, and the tube placed in the wound, and it closed, then the strings and aperture or apertures of the tube are covered by the usual protective of "gutta-percha paper" or "Lister's oiled silk," to hinder evaporation or gluing of the string. The string is now tried to see that it draws freely, and is so placed that it lies along the line of least resistance, and closely applies to the body's surface; over the gutta-percha paper and string the gauze and cotton,

etc., are to be placed. The coil of the string may be kept in an antiseptic magazine, such as a glass bottle, which can be included in the bandage or left out, as desired; in the last case, when not being used, the bottle should be tightly stoppered, and covered by an antiseptic bandage. The draw-end should be left out, and can be drawn upon from time to time, as may be necessary, until it comes free of secretion.

The soiled end of the string can then be cut away, and it and the bandage at its emergence disinfected with a saturated solution of iodoform in ether.

The other end should be protected most rigidly against infection, as mentioned above.

Or the string might be placed in a coil in the wound itself, in form of tampon, and passed out through a drainage-tube.

This might apply in wounds such as would be left after the removal of tumors (as lipoma), or might thus be used with Martin's drainage-tube in "Douglas's fossa."

The process advocated is recommended during the first forty-eight hours, when the wound is pouring out a large quantity of serum, before granulation is established on the wound's walls, which follows especially operations in which "carbol" or other irritants are extensively employed, and in this time the tube is most likely to be stopped by coagula.

A SPEEDY AND SOMETIMES SUCCESSFUL METHOD OF TREATING HAY FEVER.

Sir Andrew Clark, in an address delivered before the West London Medico-Chirurgical Society, describes as follows a method of procedure which he has employed with considerable success in the treatment of hay fever. For this treatment there are required a common laryngeal brush and a carbolic mixture, the latter being composed of glycerin of carbolic acid, one ounce; hydrochlorate of quinine, one drachm, and one-thousandth part of perchloride of mercury, heat being required to dissolve the quinine. If there is much mucus in the nostrils, cleanse them by means of a douche of warm water containing boroglyceride, in the proportion of an ounce to the pint. Dip the laryngeal brush in the carbolic acid mixture, and see that the brush is full but not overflowing. Place the left hand on the left side of the forehead, and the thumb on the tip of the nose, with the shank of the brush between the thumb and two forefingers of the right hand, and the brush itself directed upwards, push it gently but firmly into one of the nostrils, carry it as high as you can without inflicting injury, move it about so as to bring the mixture in contact with as much as possible of the interior of the upper part of the nostril, and then withdraw it. With another brush filled with the carbolic acid mixture, or with the same brush washed, dried, and replenished, you complete in the manner following the two operations required for each nostril. Having the left hand in the position already described, and the right hand holding the laryngeal brush, with the hair pencil directed forward from the body of the operator, push the brush along the floor of the nostril into the pharynx, and after insuring free contact with the adjacent parts, withdraw it. If during the operation the brush is overfull, some of the carbolic mixture will fall into the throat and excite coughing or some other discomfort. When you have thus finished the treatment of one nostril, and carefully removed any of the carbolic acid mixture which may have been spilt upon the nose or lips, you will proceed to treat the second nostril in exactly the same manner as you have dealt with the first. During the performance of these manœuvres great assistance will be obtained from the left hand of the operator being placed over the left side of the forehead and face of the patient. With this hand the operator can adjust the patient's head to the various movements of the laryngeal brush, and with the same hand placed on the tip of the patient's nose the opening of the patient's nostril can be adjusted to a convenient size and shape. When the local effects of a paroxysm are severe, and have extended to the back part of the soft palate, it will be desirable to introduce through the mouth into the pharynx the laryngeal brush moderately filled with the carbolic acid mixture, and there, by a manœuvre easily acquired and practised, to brush the posterior surface of the soft palate and the adjacent parts. The immediate effects of these manœuvres differ in different persons, and in the same person at different times. In all cases the effects are more or less disagreeable, and last from half an hour to half a day. Sometimes a little blood-stained mucus is discharged from the nose and throat; sometimes there is a slight frontal headache; sometimes there is a trivial cough, and occasionally you will have developed all the local phenomena of a paroxysm of hay fever.

When advising a patient with hay fever to submit to this plan of treatment for its relief, it is expedient to warn him beforehand of

the disagreeable effects which sometimes follow the application of the carbolic mixture, and to assure him that they are both brief in duration and devoid of danger. When this warning is withheld, some patients will grossly exaggerate their sufferings, ascribe all sorts of injurious consequences to the application, and cover the physician with undeserved reproaches. Sometimes a single application of the carbolic acid mixture is sufficient to prevent for a whole season the return of the hay fever paroxysm, and four times within the writer's own knowledge it has never reappeared. Usually two or three applications are necessary to insure a full chance of success. The length of the interval between the applications must be determined by the character of the immediate effects. If these are mild, the application may be renewed on alternate days; but if severe, at least three days should elapse between succeeding applications.—*The Lancet*, June 11, 1887.

SALOL.

As an extension of what we have already published on this subject, we abstract the experience and formulæ of GEORGI, of Görlitz, and SAHLI, of Berlin, regarding this remedy, which, although used in foreign practice, has not been thoroughly tested by the profession of America.

In rheumatism the unpleasant after-effects observed by other investigators were not observed. The carbolic-acid coloring of the urine persisted during the entire time of administration.

Average dosage per diem was from ʒiiss to ʒiii. In general the drug possessed little advantage over salicylic acid.

The antipyretic dose was 15 grains to 30 grains. A mouth-wash and gargle composed of ʒii to ʒiiss of a four or five per cent. alcoholic solution, added to ʒvi½ of water, was found useful.

The following are different formulæ for salol:

℞ Salol, gr. xv;
Ol. menth. pip., q. s. ad odorem. M.
Ft. chart. 10 in num.
One powder to be placed on the tongue, and swallowed with water.

Compressed tablets having been found unreliable, the following combination with starch is useful:

℞ Salol, gr. viii;
Amyli, gr. iss.
To be made into 10 tablets.

For external use in ulcers and skin-diseases:

℞ Salol, gr. vi to ʒi;
Ol. olivarum,
Adipis,
Lanolini, aa ʒx.

In using salol as a powder it should be combined with starch, as

℞ Salol, gr. viii to lxxx;
Amyli, ʒxiiss.

A mouth-wash of salol is prepared according to the following:

℞ Ol. menth. piper., ♏ lxxv;
Caryophyllor.,
Cort. cinnam. Zeyl.,
Fruct. anisi, aa ʒiiss;
Spiritus, Oii;
Coccionelli pulver., gr. lxxv.
Digest for eight days, and to the filtered fluid add
Salol, gr. xl.

This liquid should be added, drop by drop, to one-fourth glass of water, until a milky cloudiness results.—*Therapeutische Monatshefte*, Heft 4.

THE REPARATIVE TREATMENT OF SOME OF THE GRAVER FORMS OF VESICO-VAGINAL AND VESICO-UTERINE FISTULÆ.

At a recent meeting of the Academy of Medicine in Ireland, held April 1, 1887, DR. MORE MADDEN read a paper on the treatment of certain forms of vesico-vaginal fistulæ. Notwithstanding the great advance of modern gynæcology, in no respect better known than in the operative procedures by which vaginal fistulæ have been so generally rendered amenable to ordinary reparative treatment, the management of some cases of this kind still presents one of the most difficult problems that occasionally occur in our special line of practice. In the present communication the writer confines himself to those more difficult and exceptional cases of vesical fistula consequent on parturition. Among these Dr. More Madden includes all cases of vesico-uterine fistula in which the loss of tissue or the position and character of the rupture are such as to preclude the restoration of the former structural integrity of the parts, and in which either new vesico-vaginal or vesico-uterine walls must be built up by plastic operation, or else a new condition of the parts must be established. In most of the instances of vesico-uterine fistula that have come under Dr. More Madden's observation the patients

had been delivered instrumentally; and, moreover, were pluripara in whom the uterine walls had been previously softened and disintegrated by imperfect involution. In the latter cases there are, as a rule, but three courses available in the way of operative treatment,—viz., tracheorraphy in the first instance, followed by a plastic operation on the disruptured vesico-uterine walls; secondly, closure of the os uteri, so as to convert the uterus into an appendix to the bladder; or, thirdly, the same result may be obtained in some cases by turning the cervix into the vesical wound, within the closed walls of which it may be included. In this connection Dr. More Madden refers to a case in which, after the normal aperture of the uterus was thus closed, nevertheless the patient subsequently again became pregnant. In some exceptional instances, however, of destruction from sloughing of the entire vesico-vaginal septum, none of the reparative operations usually recommended are feasible or effectual, and in such cases the advisability of closing the vaginal orifice, so as to thus afford a possible restitution of retentive power, becomes a question for consideration. Against Simon's operation for this purpose must be recognized the consequent liability to fatal renal disease, which Dr. Emmet holds to be an inevitable result of its performance. Nor should it be lost sight of in this connection that in some instances the most extensive vesico-vaginal fistulæ may in course of time become cured without any operation by the occurrence of senile atresia of the vagina,—a fact of which two cases have come under Dr. More Madden's observation. Such instances are, however, far too exceptional to have any practical influence on the determination of the line of treatment to be adopted in any case of this kind; and in some instances, fortunately exceptional, there is no alternative to abandoning a sufferer from vesico-vaginal fistula to a life of hopeless misery, or else resort to closure of the vaginal orifice. A somewhat remarkable case of this kind is detailed in which the writer succeeded in thus curing a very extensive fistula by a modification of Simon's operation. Dr. More Madden adds that whilst regarding his modification of Simon's operation for closure of the vagina merely as a *dernier ressort*, to be adopted only in some exceptional instances of vesico-vaginal fistula otherwise incurable, this procedure, nevertheless, appears to him to be deserving of consideration in such cases. Therefore, although yielding to no one in his respect for Dr. Emmet's authority, he would not, even by that condemnation, be deterred from again resorting in any similar case to the operation by which the patient referred to was benefited. Whether in this case any renal disease supervened or not there was no data to say. Dr. More Madden, in conclusion, observed that a patient whose condition had for years previously been as miserable as any that could well befall a woman, and who, to the best of his judgment, was otherwise incurable, was, by the operation referred to, restored to a state of comfort and apparent health, which continued for eighteen months subsequently, when her death from fever occurred.—*Medical Press*, June 8, 1887.

CURE OF A CANCROID OF THE LARYNX BY EXTIRPATION THROUGH THE NATURAL PASSAGES.

FRÄNKEL, of Berlin, reports a case in which a tumor, the size of a bean, was situated on the right vocal cord, which he removed by a snare four times in succession, and which each time returned promptly. He made a diagnosis by the microscope of a cancroid growth, and in June, 1884, he again removed it in two sittings by means of the snare. Although he omitted to cauterize the site of the tumor with the galvano-cautery, as he had previously done, the growth did not return, and the patient, although 75 years old, has since remained well. He has also, oddly enough, preserved his voice, and can be truly regarded as recovered. Fränkel thinks that this case shows the superiority of intra-laryngeal operations for cancroid, and he advises the following rules for operation: In all cases where the site of the tumor is definitely ascertained, as large a portion as possible should be removed with the snare or forceps, through the larynx, and under the influence of cocaine. If the microscopic examination shows a cancer to be present, and no especial danger that the cancer implicates both sides exists, an effort should be made, under anæsthesia, if needed, to remove the growth from its position with the forceps or snare. The patient should be kept under observation with the laryngoscope, and each returning mass removed in the same way. If a complete removal cannot be effected by intra-laryngeal operation, partial resection should be performed. If both sides of the larynx be implicated, the question may yet be raised whether a removal by intra-laryngeal procedure is not feasible.—*Centralblatt für die gesammte Therapie*, June, 1887.

RAPIDITY OF THE BLOOD-CURRENT IN THE KIDNEY AND OTHER ORGANS.

According to the Vienna correspondent of the *British Medical Journal*, June 4, 1887, DR. GÄRTNER, assistant to Dr. Stricker, Professor of General and Experimental Pathology, recently made an interesting communication to the Imperial-Royal Society of Physicians of that city on the rate at which the blood flows in the kidney and other organs. Several similar experiments had previously been recorded. Claude Bernard examined the rapidity of the blood-current in salivary glands when at rest, and when subjected to irritation; Sadler and Gaskell (under the direction of Ludwig) that in passive and in irritated muscles; and among the researches on this subject made in the Ludwig laboratory, must also be mentioned those of Slavjanski on the rapidity of the blood-current in the inferior vena cava, and of Basch and Tappeiner on its rate of movement in the portal vein. This method of separately examining each organ as to the rapidity with which the blood passes through it has, however, other advantages besides the immediate results obtained by these inquirers. Each organ can thereby be examined as to the presence of nerves in the blood-vessels, and as to the different conditions under which these nerves act either in the way of narrowing or distending the vessels. Some hints for therapeutic use might also be got by ascertaining the various ways in which the vessels of a particular organ are influenced in respect of the quantity of blood contained in them. This mode of investigation, moreover, makes it possible to perform comparative experiments as to the quantity of blood passing through two different organs of the same animal in equal spaces of time. From such experiments it is clear that the rapidity of the outflow of the blood from the renal vein is greater than that from the femoral vein below Poupart's ligament, though the region drained by the latter is comparatively much larger. Dr. Gärtner performed his first experiments on the kidney of the dog. A canula, provided with a tube to carry away the outflowing blood, was introduced into the renal vein, and the blood-current was observed either by counting the blood-drops as they fell, or by Ludwig's graphic method. When the operation was performed with sufficient care, and without doing any injury to the kidney itself, the loss of blood was comparatively slight, and did not interfere in any way with the experiment. In a curarized animal, when artificial respiration was suspended, the rapidity of the blood-current diminished exactly in proportion as the blood-pressure increased. In three cases, not a single drop of blood escaped for more than a minute, when the animal was near suffocation. The oscillations of the blood-pressure were also shown by the quantity of outflowing blood; to each fall of the blood-pressure curve corresponded a quicker dropping of blood, and when the arterial blood-pressure increased the drops again fell more slowly. It was known that when the suffocation of the animal was continued for a longer time, the blood-pressure again decreased, but there was no corresponding increase in the number of falling blood-drops. This was another proof of the truth of the theory established by T. Wagner and Openchowski, that the decrease of the blood-pressure which preceded the death of the animal did not arise from weakness in the blood-vessels, but from diminished action of the heart. Dr. Gärtner further remarked that Carl Ludwig and Thiry had, by direct inspection of the exposed kidney, observed that it became pale, and that the blood-vessels contracted when the medulla oblongata was irritated. This phenomenon, on which one of the most important points of the doctrine of circulation is based, when produced in the manner described by Carl Ludwig and Thiry, is so slight that no exact idea can be obtained of it, even when the experiment is repeated for several times. By the experiment of the outflow of the blood, however, the contraction of the vessels can be demonstrated even to a great audience. Besides the kidney, Dr. Gärtner said he had performed some experiments on the crural vein. On suffocation of the animal, the action of the blood-current was contrary to that in the renal vein. The blood-drops fell with a rapidity directly proportional to the increase of blood-pressure. Such an antagonism had already been proved to exist by other methods; for instance, it had long been known by thermometry that after division of the sciatic nerve in animals the blood-vessels of the hind legs became paralyzed. It was observed that, in such cases, the temperature of the hind legs was raised, and their size also increased, as well as the pressure in the veins. Here also no other mode of operation could produce the phenomena in so striking a manner as what may be called the bleeding method. Before the sciatic nerve was cut through, the blood could be seen falling drop by drop from the mouth of the canula, while after division of the nerve-trunk it gushed out with

great force and rapidity, as if a sluice had been opened. Its flow could again be diminished and slackened when the peripheral end of the sciatic nerve was irritated by electricity. Dr. Gärtner stated that, together with Dr. T. Wagner, he had performed similar experiments on the brain, and that he would give an account of them at one of the next meetings of the society.

CASEIN AS AN EMULSIFIER.

At the last meeting of the Paris Pharmaceutical Society, M. Léger submitted some information respecting the employment of casein as an emulsifying agent (*L'Union Pharm.*, May 16, p. 193). Considering that the natural emulsions, such as vegetable juices, milk, etc., owe their peculiar condition to the influence of albuminoid substances, he inferred that these substances might be utilized in preparing artificial emulsions if they could be separated in a form convenient for manipulation and preservation. Casein, which so perfectly emulsifies butter in milk, was chosen for the experiment. It was separated by adding sixty grammes of ammonia to four litres of milk, and after twenty-four hours' contact removing the soapy layer that collected at the top, and then precipitating the serum with acetic acid. The magma of casein, after being strongly pressed, was mixed with ten grammes of sodium bicarbonate and sufficient sugar that the product should contain ten per cent. of its weight of casein. This "saccharide of casein," when powdered, is said to be easily soluble in water, and capable of being employed in the same proportion as gum in making an emulsion, without requiring the use of a mortar. The sole defect admitted by M. Léger is that the "saccharide" gives off a slight animal odor.—*The Pharmaceutical Journal and Transactions*, May 28, 1887.

WILL THE KNEE-JERK DIVIDE TYPHOID FEVER FROM MENINGITIS?

Dr. Hughlings Jackson asserted recently at the Medical Society of London that loss of knee-jerk might prove of service in the diagnosis of meningitis from typhoid fever; for he had never known knee-jerk to be absent in typhoid fever, whilst he had found it to be wanting in cases where the necropsy ultimately proved the disease to be meningitis.

At the same meeting Sir Dyce Duckworth asserted that the knee-jerk might be absent in undoubted typhoid fever. Further light is thrown upon this subject by a paper by Dr. Angel Money, in the *Lancet* for May 21, 1887. He suggests that prolonged pyrexia with all that it involves, whether in the way of direct deterioration of protoplasm by the fever heat or of indirect deterioration by collateral consequences of the pyrexia, is the cause of the very general exaggeration of the deep reflex and muscular irritability to be found in typhoid fever, phthisis, and other continued fevers, and he states that he has not seen a case of typhoid fever in which the knee-jerk was lost; though the jerk may have been absent on the day or so preceding death in fatal cases, which are rare at the age at which tubercular meningitis is common. On the other hand, tubercular meningitis does not always cause the disappearance of the knee-jerk. Sometimes the knee-jerk is increased in cases of undoubted tubercular meningitis, but only when the child is unconscious or nearly so. He has even observed, in company with Dr. Gee, that tapping of the patella tendon on one side caused powerful contraction not only of the quadriceps extensor of the same side, but also of the adductors of the thigh of the opposite side, in a case of tubercular meningitis. Such phenomena will not be found to be very uncommon if they be diligently searched for, and may be seen in diphtheritic paralysis, as well as in tubercular meningitis and phthisis. In order to answer so far as is possible the question which forms the title of this brief communication, Dr. Money formulates the following propositions: Given a case of fever with morbid mental phenomena, without a typical rash, optic neuritis, or choroidal tubercle, or any sign of cranial nerve paralysis or irritation, if the knee-jerk is lost on both sides during the illness, and the wasting of muscle is unattended with loss of response to the faradic current, the diagnosis should be meningitis rather than typhoid fever. If the knee-jerk be exaggerated, and if there be ankle-clonus, no certain conclusion can be drawn, for these conditions occur both in typhoid fever and in meningitis (and other conditions). That increase of the jerks (with or without ankle-clonus), accompanied by lively spontaneous flickerings (fibrillar contractions) of the muscles, is much more likely to be due to prolonged pyrexia than to direct disturbance of the nervous functions from meningitis or other nervous irritation. If typhoid fever be complicated with myelitis or meningitis—complications of rare occurrence—then the jerk may be lost, whilst in tubercular

meningitis its disappearance for a few hours, or a day, or a few days, is by no means rare. A variable state of the knee-jerk—*e.g.*, one day present, next day absent, and a third increased—points to meningitis, not fever.

To make what may be considered a curious comparison, Dr. Money thinks that the differential diagnosis of meningitis from mere fevers might be assisted far more by the state of the knee-jerk than by the swelling of the spleen; for unless the splenic enlargement be enormous, tubercle as well as typhoid fever and other diseases—*e.g.*, pyæmia—will account for the splenic swelling; whereas absence of the knee-jerk, or rather ascertained disappearance of the same, is practically never met with as the simple outcome of prolonged pyrexia.

A NEW OPERATION FOR HEPATIC ABSCESS.

Dr. George Zancarol, of Paris, describes the following operation as performed by him for hepatic abscess.

The operation consists in making a large opening sufficient to expose the whole cavity of the abscess, and in thoroughly cleansing it of all pus and *débris* of sloughing hepatic tissue. It may be divided into three stages: 1, exploration of the liver; 2, opening the abscess; 3, cleansing the abscess-cavity.

1. *Exploration of the Liver.*—After having well washed the skin with a brush and soap and water, and a two per cent. solution of carbolic acid, an exploring trocar is plunged into the liver to find the abscess; this exploratory puncture may have to be repeated several times, so that a good idea may be formed of the size and direction of the abscess.

2. *Opening the Abscess.*—An opening is made with the thermo-cautery into the lower third of the abscess, five to seven centimetres (two to nearly three inches) long, according to the size of the abscess, and as much as possible in the direction of its greatest diameter. This opening must be sufficiently large to enable the surgeon to see the whole cavity with ease when the edges of the opening are held well apart by retractors. To obtain this result in abscesses of the left lobe an opening in the soft parts will suffice; but if the abscess is in the right lobe, resection of one or two ribs will be necessary. This resection is also performed with the thermo-cautery, using an elevator to detach the periosteum, and Liston's bone-forceps, care being taken not to wound the intercostal artery; should this, however, happen, the hemorrhage will cease as soon as the abscess is opened. After resection of the bone, the abscess is opened with the thermo-cautery, keeping always in the direction of the resected rib, and with the aid of two strong retractors held by an assistant, while the margins of the incision are kept open, they are pressed against the liver, and kept in close contact with the abdominal and thoracic walls, so as to prevent either pus, or the liquids used for washing out the abscess, from finding their way into the abdominal or pleural cavities. If this precaution be observed no harm will result, even should there be no adhesion between the wall of the abscess and the parietal peritoneum; for when once the abscess has been thoroughly washed and cleansed, adhesions will be established before fresh pus can accumulate. In fifty such operations performed by the writer during the last two years, it is stated that no purulent matter has ever escaped into the pleural or peritoneal cavities, although cases were operated upon in which no adhesions existed.

3. *Cleansing the Abscess-Cavity.*—The retractors being still held in the position already described by an assistant, a strong current of warm distilled water is allowed to play within the abscess-cavity by means of a siphon; every particle of adherent pus and necrosed tissue is removed with the fingers, or with sponges fitted to proper holders, and the washing out is continued until the walls of the cavity look perfectly clean, often granulating, and the water returns clear. The retractors are then withdrawn, two drainage-tubes of large calibre are inserted in the cavity, and the dressings applied, which are left undisturbed for twenty-four hours; the cavity is then washed out again with warm distilled water, as above described, and the current kept on until the water returns perfectly clear.

As a rule, the temperature becomes normal immediately after the first washing, but if fever should reappear, or if the pus is abundant, the washing-out should be repeated every twelve hours; if in spite of all this the fever persists, or diarrhœa sets in, this would indicate that other abscesses exist in the liver, and such cases are invariably fatal.—*British Medical Journal*, June 11, 1887.

THE TREATMENT OF TYPHOID FEVER BY ANTIPYRIN AND THALLIN.

At a recent meeting of the Association of American Physicians, Dr. Francis Minot, of Boston, read a paper on the above subject,

in which the following conclusions were reached: 1. Both antipyrin and thallin have a remarkable power of reducing the temperature in typhoid fever. 2. In no case was the use of these refrigerants apparently followed by any unfavorable effect upon the course of the disease. 3. The general condition of the patient was more comfortable after taking antipyrin and thallin, which were often followed by sleep. 4. The refrigerant medication by antipyrin and thallin appears to have no specific or decided effect upon the course or issue of typhoid fever. It often contributes much to the patient's comfort; perhaps indirectly promotes his safety. 5. The effect of antipyrin and thallin in promptly lowering the temperature shows that the danger in typhoid fever does not consist in high temperature alone, and that the latter is rather an index of the violence of the abnormal condition which we call fever, though perhaps adding somewhat to the danger. 6. By the internal use of antipyrin and thallin all the effects which are claimed for the treatment of typhoid fever by the cold bath are readily obtained without the trouble and inconvenience of the latter method, and without exposing the patient to the dangers of exhaustion and shock consequent on the fatigue of removal from bed. 7. These remedies may be given without danger to the youngest patients in suitable doses, and, indeed, their beneficial effects are more decided and the unfavorable consequences are less observable than with adults. —*Medical Record*, June 11, 1887.

THE TREATMENT OF THE DYSPEPSIAS OF INFANCY, AND THEIR CAUSATION BY MICROBES.

Hayem, of the Hospital of Saint Antoine of Paris, reports the following interesting observations in a pavilion in the hospital especially devoted to very young children:

"Shortly after going on duty at the hospital my attention was attracted by the frequency and gravity of the gastro-intestinal disorders of the children under my charge. These cases are, as is well known, among the most common of diseases among such patients. At the beginning I tried to combat them with the ordinary means of treatment at present recognized: regulation of the times of nursing and of all artificial foods, the use of alkalies, absorbent powders, calomel, hydrochloric acid, and, when vomiting was present, cocaine or sedative compounds. Hydrochloric acid had formerly seemed to me to give the best results. But such results were irregular, at times excellent and well sustained, afterwards transient and incomplete, and more often nothing at all. After finding the matter ejected from the body is generally, in such cases, neutral or feebly alkaline, the idea suggested itself of trying another acid, and I was pleased to find in lactic acid a remarkably useful medicament.

"Meanwhile some of the children, apparently cured by lactic acid, were taken with relapses after the medicine was stopped. With others the acid seemed to lose its effect. It was also noticed that as soon as several patients, suffering from diarrhœa with greenish stools, were brought into the wards an epidemic of this disease appeared and became quite general. The contagiousness of the disease impelled me to order that all linen soiled with dejecta or vomit be soaked in a solution of bichloride of mercury, 1 to 1000. Upon this the diarrhœa ceased. The lactic acid was given in a solution of 2 to 100, in teaspoonful doses, a quarter of an hour after nursing. From 5 to 8 teaspoonfuls may be taken in twenty-four hours, amounting to from 6 to 9 minims of pure lactic acid. The effects of this treatment were promptly recognized. When vomiting was present it immediately ceased, the number of stools decreased, and the dejecta lost their characteristic green color and became yellowish. As soon as the stools became normal, in regard to color and consistence, and in two or three days (rarely in five or six), the patient was cured. But this result was only obtained when the prophylactic measures described were fully carried out. Several times neglect of these measures caused the disease to reappear, when strict observance caused it again to disappear.

"In the course of four months all the children had rapidly recovered, and the epidemic had not spread to their neighbors. In cases of tuberculosis and children in the last stages of collapse, the dyspepsia and diarrhœa were not completely suppressed by lactic acid. But even in these cases the character and color of the stools were changed, and they became yellow. While I had been occupied with the treatment of these cases, the resident physician, M. Lesage, began experiments to seek the cause of the coloring of the stools. It was not long before he was able to recognize in the greenish dejecta a particular bacillus which formed in considerable masses. He was able to isolate and cultivate this microbe, which produced the green matter by a sort of excretion, and it was owing to his studies

that these interesting results were obtained. Among other valuable facts demonstrated he showed that lactic acid, whose curative power in the children we had learned, had the property of destroying, even in dilute form, cultures of these bacilli made upon peptonized gelatin. These experiments seemed to me to explain satisfactorily the contagion of the disease. Still, they could not entirely prove that the disease had been caused by the introduction from without of the bacilli into the digestive tract. It was true, from conditions always present in the diarrhœas of children, that the microbe of diarrhœa with green stools could find, by reason of a previous modification in the character of the secretion of the digestive tract, a nidus favorable to its development and multiplication. This probably happens as follows: The microbe gains entrance to the stomach with food, and under ordinary conditions finds a medium favorable to its multiplication. In dyspepsia the secretions of the stomach are altered, and the microbe comes into the intestine without having lost its vegetative power. There it finds a medium of neutral or alkaline reaction which permits it to multiply with great activity, and produce the green color of the stools of diarrhœa. Lactic acid can act in two ways,—by combating the dyspeptic condition and rendering the contents of the stomach properly acid, or by sterilizing the germs of the bacilli, as we observed that it was sufficient, when experimenting upon cultures, to add a small amount of lactic acid to cause the spores of the bacilli to die.

"M. Lesage has undertaken experiments which will endeavor to produce diarrhœa with greenish stools in young animals by pure cultures of this bacillus, to determine precisely the conditions favorable for producing the germination of the bacilli in the digestive tract. His results are needed to explain the action of lactic acid. Meanwhile, the use of analogous agents was indicated. I have already spoken of the efficacy, in some degree, of hydrochloric acid in such cases. It is an antidyspeptic agent whose action is as difficult to explain as is that of lactic acid. I can only remark that all acids certainly hinder, outside the organism, the development of bacilli; but under the conditions obtaining when they are given in illness, they acidulate only the contents of the stomach. If we can demonstrate that they act as germicides, it must be admitted that they sterilize in the stomach the germs which would otherwise develop in the succeeding portions of the digestive tract. In addition to the acids we have the great number of disinfectants proper, among them naphthalin, iodoform, sulphide of mercury, and calomel has seemed to me to merit trial in this category. This drug has been elsewhere recommended as one of the best for this purpose. After having made trials with these substances, lactic acid has seemed to me preferable. It is perfectly well borne, it is easily and simply given, and its results have been to me very conclusive. In conclusion, the stools of nursing children suffering from diarrhœa owe their color to a material produced by a specific bacillus. It is probably produced by a dyspeptic condition which permits the bacillus to find in the digestive tube a medium suitable for its growth. I believe, further, that I am justified in saying that this diarrhœa is contagious, and that germs deposited upon linen soiled by dejecta are the agents of the contamination. However this may be, before the questions raised by the demonstration of the microbic origin of diarrhœa with greenish stools are definitely settled, I do not wish to delay longer in bringing to the notice of the profession the prophylactic and curative treatment which has made me, in a sense, master of this formidable malady, with the hope that my colleagues will come to confirm the value of this treatment."—*Bulletin Général de Thérapeutique*, May 30, 1887.

THE TREATMENT OF LUPUS BY SCRAPING.

At a meeting of the Liverpool Medical Institution MR. RUSHTON PARKER read a paper on the treatment of lupus by scraping, which in some form he recommends and performs in lupus of all kinds and stages. In the most extensive degrees of lupus ulcers he uses Volkmann's sharp spoon, in the slighter forms of pustular, scabby, or erythematous lupus, especially when also recurring on a small scale after partial healing of serpiginous cases, he uses a blunted gum lancet, a blunted wide-eye spud, the point of a tooth-elevator or tooth-scaling instrument, according to the size of the nodule to be scraped away. The part is rendered bloodless by ring-compression with the aid of stout wires of various sizes mounted in handles, and ending obliquely in a ring which is pressed into the skin around the spot to be scraped, facilitating the recognition and removal of every particle of lupoid tissue. Before removing the ring, nitrate of silver is rubbed into the raw surface, preventing or arresting subse-

quent bleeding, and providing a dry aseptic scab for the next two or three days. Two cases were shown that had been for fifteen years under treatment,—one a typical case of extensive ulcerating lupus of the face, including cheeks, nostrils, nose, lips, gums, and even the inside of the upper eyelid; the other, a marked case of erythematous lupus of cheeks and nose. The former had almost recovered after two or three scrapings during the last twelve months, the latter after seventeen scrapings (on a very small scale at each spot) during the last two years at intervals of from twelve days to three months. What is claimed by scraping is thorough and accurate removal of morbid tissue, without waste or injury to the neighboring healthy parts it otherwise keeps unhealed.—*Medical Press*, June 8, 1887.

THE ACTION OF HYDROCHLORATE OF HYOSCINE.

Under the direction of Kobert, Sohrt, according to the analysis of his paper published in the *Medical Chronicle* for June, 1887, by Dr. D. J. Leech, has made a series of experiments on the physiological action and therapeutic use of hyoscine, the results of which are published in the above paper. The conclusions arrived at by Wood, as to the manner in which hyoscine influences the various organs, are to a large extent confirmed, but on some points the views of the American and German observers are not in accord.

In healthy men the injection of $\frac{1}{70}$ of a grain gave rise, according to the latter, to disturbances of co-ordination and some muscular weakness; the head felt heavy, sank on the shoulder, and could only be lifted up with difficulty; the limbs likewise felt heavy, and the upper eyelid could hardly be raised; there was a sense of fulness of the head, the pupils were dilated, and a tendency to sleep was noticed in every case; the throat was dry. The hallucinations, delirium, nausea, and trembling, which have been described by Wood and other observers as following the administration of the hydrobromate and hydroiodate of hyoscine, were not observed by Sohrt and Kobert.

Hyoscine, according to Kobert, even in large doses, is well borne by some of the lower animals; a cat recovered after 9 grains, and a small rabbit was unaffected by 3 grains. After large doses it is excreted unchanged by the kidneys. It influences but little the cerebral functions of the lower animals, but has a markedly calming effect on man when the brain is excited. The depression of the reflex excitability of the spinal cord, which, according to Wood, was present in lower animals after the administration of hydrobromate, was not observed in the experiments made by Sohrt.

Claussen, who published his investigations on the action of hyoscine in 1883, stated that this drug stimulates the vagus and decreases the heart's frequency. Wood concluded that it had no influence on the vagus. Kobert, however, is of opinion that it paralyzes the vagus terminations in the lower animals, and probably also in man. In a lunatic with depressed circulation, which he attributed to inhibition exerted by the brain on the heart, he found that hyoscine always improved the pulse. In healthy men, however, increased rapidity of the pulse, which ought to follow vagus paralysis, was not always noticed. It antagonizes the influence of muscarine on the heart. In cold- and warm-blooded animals it dilates the peripheral vessels, probably by its paralyzing influence on the ganglia contained in their walls. Kobert does not think that it influences the vaso motor centre, as the experiments of Wood led him to believe. The respiration is unaffected, according to Kobert, while Wood considers that this drug has a depressing influence on the respiratory functions, acting in all probability on the respiratory centre.

Hyoscine certainly diminishes the secretion of saliva, hence the drying of the throat which follows its use. The secretion of perspiration, too, is lessened, and some of Sohrt's patients, who tried both hyoscine and atropine to check sweating, preferred the former drug.

It is well known that muscarine increases intestinal peristalsis; hyoscine antagonizes this influence, paralyzing therefore the nerve apparatus on which muscarine acts.

According to Dr. Emmert, of Berne, hyoscine acts more energetically and rapidly as a mydriatic than either atropine or duboisine. and is effective even in solution of 1 part to 1000. Kobert, however, states that complete dilatation of the pupil is only produced by full doses. It acts, he says, by paralyzing the periphery of the oculo-motor nerve. Sohrt found that $\frac{1}{110}$ of a grain dilated his pupils without paralyzing accommodation. Sohrt gave subcutaneously from $\frac{1}{70}$ to $\frac{1}{110}$ of a grain to a number of lunatics suffering from mental excitement and insomnia, who had taken other calminatives in vain. He administered the drug about one hundred times.

Sleep was always produced, and no threatening symptoms were noticed.

As a rule, the patients fell asleep in ten to fifteen minutes after the injections, and did not awake for five to eight hours. A little fulness of the head was at times complained of during the morning following an injection. It is specially worthy of remark that the hyoscine produced good results in several cases in which hyoscyamine in full doses had been ineffectual. Kobert is inclined to consider hyoscine beneficial as a sedative in mental diseases only.

EXTIRPATION OF THE CRICOID CARTILAGE FOR ENCHONDROMA.

BÖCKER, of Berlin, reports in the *Centralblatt für die gesammte Therapie*, June, 1887, the case of a man, aged 62, on the cricoid cartilage of whose larynx there was a hard tumor as large as a hazel-nut. After performing tracheotomy, examination with the finger showed that the tumor was not movable, but embodied with the flat and also curved surfaces of the cricoid cartilage. The operator then introduced a tampon canula, and split the larynx to the hyoid bone, sawing through the thyroid cartilage, and extirpated the cricoid cartilage, leaving the arytenoid cartilages behind. The tumor proved to be an enchondroma, with the formation of spongy bone-substance in its interior. The patient recovered from the operation, but was obliged to wear a permanent canula, as the vocal cords approximated otherwise on inspiration. Deglutition was unimpaired, and the patient was able, by stopping the aperture of the canula, or by using Brun's canula, to speak, although the voice was raw and hoarse in quality. At the end of a year the patient remained without any indications of a return.

SANITATION OF THE LYING-IN CHAMBER.

At a meeting of the Academy of Medicine in Ireland, DR. BOXALL, in a paper dealing with the above subject, pointed out that much of the illness following delivery was essentially of a preventable nature. It is not the mortality alone which should be taken into account. Those minor ills of the puerpera, the outcome of less fatal attacks, must be also included. Septic poison can only be produced within the passages where air is permitted to enter, or any decomposable material is left behind; for both the presence of air and a suitable nidus are essential to decomposition. A special liability, however, exists of the poison, ready made so to speak, finding an entrance from without. Dr. Boxall urged the importance of inquiring into the antecedents of the nurse, with a view to ascertain if she had been nursing or otherwise brought into contact with any person suffering from septicæmia or pyæmia, burns, abscesses, or acute specifics. If exposure have occurred, he advised a complete change of clothing, and a general carbolic or iodine bath. He regarded as the most important element in antiseptic midwifery the thorough washing of the hands with soap and water, including the use of the nail-brush; but he further advised the soaking of the hands and wrists in strong antiseptic solution (sublimate 1 in 1000, or carbolic acid 1 in 20) immediately before making any examination, performing any obstetric operation, or touching the genitals of the patient. Second only in importance to this was the thorough washing and subsequent disinfection of all instruments and utensils employed. The abolition of sponges, and the employment of cotton-wool or tow in place of napkins, he thought beneficial in every way. Special inquiries should be made into the source of all articles passed on from one patient to another, such as binders and mackintosh sheets. Parish bags in use among the poor should always be regarded as likely to contain assorted samples of infection. The condition of the drains should be carefully ascertained, and any defects remedied long before the expected date of the confinement. Too little attention was frequently paid to this point, and also to the subject of ventilation. A fire should be kept burning in the grate, and one window at least opened a few inches at top. With regard to the choice of antiseptic agents, he urged the advisability of employing one of universal applicability rather than several, more especially when incompatibility exists. Sublimate is incompatible with soap (hence the hands must be well rinsed before they are immersed in the solution) and with oils (hence sublimated glycerin or vaseline should be substituted for carbolic oil or lard, as a lubricant); carbolic acid is incompatible with Condy's fluid, which, again, is decomposed by soap, while iodine enters into combination with the alkali contained in it. These are points which are frequently overlooked. Whatever antiseptic be used, the strength should invariably be measured accurately, for if the proportion be merely guessed at, not only may the solution be so weak that its sepsis-destroying properties

become much deteriorated or are quite destroyed, but, on the other hand, it may be so strong that great danger may result, either locally to the living tissues or generally by absorption, especially when the more powerful agents are employed in the form of douche after delivery. For the hands and instruments he advocated the invariable employment of corrosive sublimate (1 in 1000), or carbolic acid (1 in 20): solutions of the same strength to douche the vagina in every case during the first stage of labor, and after labor subsequently to douche the uterus also, where any intra-uterine interference or foul discharge from the cervix specially indicated such a proceeding. But after the first douche the solution might usually be reduced to half the strength. The sublimate douche frequently administered was not unattended with danger, and he would never advise its use unless the patient were under constant observation. In ordinary cases, when the douche was given as a routine practice, he considered Condy (color of claret) or boracic acid (saturated solution) of sufficient potency. While he invariably advocated the douche (giving morning and evening till the lochial discharge ceases, at from 110° to 115° F.) as a routine practice when the services of a competent nurse are available, he felt sure that in the hands of an ignorant woman more harm than good might ensue. In such a case it was advisable to trust to the more simple details necessary to insure thorough washing and disinfection of the hands and instruments, the exclusion of all sources of infection and of decomposition from, and free ventilation of, the lying-in chamber, and to limit the employment of the douche to the labor, unless special circumstances dictated its subsequent use, and then it should be performed by the doctor in person or under his immediate supervision. Intra-uterine irrigation should never be intrusted to the nurse, however efficient she may be.

Dr. Ingle thought Dr. Boxall must have selected an unusual season or place for the statistics given. He did not think the experience of private practitioners would furnish anything near such an estimate, but rather evidence wholly to the contrary. Effort after such sanitation as had been described by Dr. Boxall might be of service in lying-in institutions, with trained skill and careful medical oversight; but in general practice he thought it undesirable that much interference with the parturient should be encouraged other than great cleanliness. Injections of vagina, except specially needed, were rather to be discouraged, as involving many risks.—*The Lancet*, June 18, 1887.

THE TREATMENT OF EPISTAXIS.

The embarrassment too often created by the persistence with which hemorrhage from the nose continues in some cases, notwithstanding that resort is had to the extreme course of plugging the nares, renders any suggestion for effectually controlling this accident acceptable to practitioners. Its occurrence, moreover, not unfrequently takes place under circumstances that tend to increase the concern naturally aroused by loss of blood so alarming in extent as in many instances it is; very often the surgeon is hurriedly called in to arrest the flow without having been informed of the nature of the illness he is about to attend, and he is consequently unprovided with the special appliances deemed necessary for meeting such an emergency, and this, it may be, at a distance from home much too great to allow of any steps on his part towards procuring the means of easily making and placing in position the plugs with which, as a rule, he would seek to put an end to the bleeding. This question has recently been under discussion at the Paris Academy of Medicine, before which body M. Verneuil has described a method that he is disposed to regard as specific in even grave cases, and which consists in applying over the region of the liver a counter-irritant in the form of a large blister; and he narrated three cases in which this plan of treatment effectually arrested the epistaxis, even after trial with digitalis, ergotine, and plugging had been made in vain. However successful the proceeding may be, it is impossible to regard it as less than a severe remedy, and if a simpler one should prove to be attended with equally good results, the choice, in ordinary cases, would most certainly lie with it.

That such is the case would appear to be the fact from the results claimed by Mr. Charles H. Wade (*Medical Press*, June 1, 1887), which follows the immersion of the feet and legs of the patient in water as far as possible, and as hot as can be borne. He states that he is indebted for this method to Mr. Jonathan Hutchinson, who found it equal to the needs of all occasions on which he employed it. Mr. Wade also states that he has employed this plan in a number of cases with the greatest success. The success of this process evidently depends upon the abstraction of blood from the head, owing to the

greater demand for it in the lower extremities under the influence of the hot water.

Moreover, it is probable that the force of the outflowing stream through the nostrils being once diminished, coagulation is encouraged in the nasal vessels as a consequence of the loss already sustained, for the tendency, even in obstinate cases of epistaxis, is undoubtedly to the production of clot after a certain period in the process of bleeding. The frequent uselessness of hæmostatics during the flow also points to the same conclusion; for these agents act readily enough when once the loss of blood is arrested, they fail earlier because the effect of their local action is undone by the persistence of a current past the points affected, but which current is slowed or even stopped when a new demand for largely increased supplies of blood is set up in a more dependent part of the body.

It is impossible not to see in the plan of M. Verneuil a close relation to the one described, though the latter has many elements of advantage to recommend a preference for it, at any rate, at first. Whatever opinion may be held as to its mode of action, however, there can be no question of its extreme value as a mode of controlling epistaxis. It is sufficiently simple to be tried in all cases; it will rarely or never fail.

FLUORIDES OF AMMONIUM AND IRON IN HYPERTROPHY OF THE SPLEEN.

Believing on physiological grounds that fluoride salts will probably prove as efficacious in the treatment of chronic splenic hypertrophy as hydrofluoric acid has done in the treatment of bronchocele at the hands of Dr. Woakes, Dr. John Lucas (*Practitioner*, June, 1887) gave the former a trial, and has conducted a series of therapeutic and clinical experiments with these drugs, of which the following is a summary: Certain physiological effects, more or less common to all the cases, were observed. Briefly, there was a marked influence on the blood-pressure, which had a downward tendency at first; the pulse fluctuated and the number of beats was lessened. In this respect Dr. Lucas's experience was quite in accord with that of Dr. Coates. It was also found that the drug possessed antipyretic properties when the temperature ranged above the normal point, and it prevented attacks of ague, thus proving it to be an antiperiodic. Dr. Coates writes that he did not notice this action. In all the cases it produced nausea at first, though gradually a sort of tolerance appeared to have been established, and the drug could be borne in much larger doses. It produces some intestinal irritation, probably acting more on the duodenum, and giving rise to some diarrhœa. Dr. Lucas is not sure that it has any action as a hepatic stimulant. The appetite after a time improves under its use. Almost all the patients complained of a pricking or twisting pain or uneasiness in the spleen itself, the original pain being sometimes aggravated. When given carefully and after meals, which should be the invariable rule, it is better borne, and does not produce nausea and purging to the same extent. It certainly seems to excel, in reducing the size of the spleen, any other method of treatment with which we are acquainted. It is a new remedy in this connection. Although Dr. Lucas began with small (5-minim) doses, he should be disposed to start with 20 or even 30 minims diluted in an ounce or two of water, and administered always after a meal. The combination of iron with hydrofluoric acid would prove more valuable on account of the hæmatinic properties of the former, and because as an adjunct it would exercise its astringent and tonic influence on the mucous lining of the stomach and intestines, and thus in a great measure tend to counteract the unpleasant effects complained of, and perhaps also to augment the evident specific action on the spleen. The fluoride of quinine can easily be prepared, and so also can the triple fluoride of iron, quinine, and ammonium.

ANTIPYRIN AND ANTIFEBRIN IN HEADACHE AND EPILEPSY.

The use of these two drugs in headache and epilepsy has recently been attracting a certain amount of attention, and we have already laid before our readers the analyses of some recent literature on this subject. In the *New York Medical Journal* for May 28, 1887, Dr. Allan McLane Hamilton extends the experience of his predecessors with the use of these drugs. Some of the cases of headaches in insomnia and epilepsy under his care had already been treated with more or less success with the salicylate of sodium, and the cases of epilepsy were under modified bromide and other treatment.

The cases of headache selected were those of migraine of the angeio-spastic and angeio-paretic varieties, as well as ordinary facial or sub-occipital neuralgias; and the cases of

epilepsy which were chosen were those of the symptomatic form complicated with objective and subjective indication of cerebral disease, as well as the simpler forms apparently dependent upon continued states of cerebral ischæmia, cerebral instability, etc.

In angeio-spastic migraine with evidences of cutaneous anæmia, dilated pupils, and coldness, the headache commencing in the morning, Dr. Hamilton found both antipyrin and antifebrin would quickly abort the paroxysms after the first dose.

He reports several cases illustrating the truth of these statements.

In four other cases of epilepsy in which either antipyrin or antifebrin was used there was some improvement in three of the cases, in each of which there was post-epileptic headache; and aggravation of the disease in the fourth, the patient's paroxysms being symptomatic of coarse cerebral disease. In one case of pure hystero-epilepsy the beneficial action of the remedies was absent.

Dr. Hamilton has also used both drugs in cases of habitual insomnia, in doses varying from 3 to 8 grains of the antifebrin, and 10 to 20 of the antipyrin, without appreciable result, though in a case of maniacal excitement, due to nervous exhaustion and connected with moderate rise of temperature (102° F.), 15 grains of antipyrin repeated twice produced refreshing sleep and a subsidence of excitement. There can be no doubt, however, that in wakefulness due to general disease, especially with high temperature, the value of both these drugs as hypnotics is very great.

Dr. Hamilton has at present other patients under treatment, and will subsequently report progress. It would seem as if both remedies were of value in headaches or cerebral states attended by anæmia, or in the excitement due to cell-malnutrition and exhaustion; and, though antipyrin seems to be the more serviceable remedy, it possesses drawbacks which do not belong to antifebrin. It would appear as if the remedies were valueless or even harmful in cases of organic or symptomatic epilepsy, but worthy of a trial in the light cases attended by rather general cerebral vascular spasm and not much muscular movement. In several cases of *petit mal* the good effect of continued doses of antipyrin and antifebrin is manifest, for the losses of consciousness are far less frequent than when the patients were under other treatment. So far as tolerance goes, he has given to one patient 45 grains of antipyrin in two hours without ill effects.

THE USE OF PILOCARPINE IN DISEASES OF THE LUNGS.

Riess has arrived at the following conclusions, as published in *Schmidt's Jahrbuch*, 1887, No. 5:

The writer believes that the fear that pilocarpine will depress the heart's action is greatly exaggerated, as he has given it in a large number of heart-, kidney-, and lung-diseases, and has never seen severe collapse attend its use. The favorable effect of the drug in pulmonary disease is very little known. Its good effect is dependent upon its property of producing a plentiful fluid secretion in the air-passages, and thus facilitating the removal of inspissated masses formed by chronic hypersecretion.

Riess observed especially good results in chronic bronchitis with scanty, tenacious sputa, and especially where asthma was a complication of emphysema. The dosage with a large number of patients of middle age and well-preserved strength was daily $\frac{3}{10}$ of a grain by hypodermic injection. To old and feeble patients half this amount ($\frac{3}{20}$ of a grain) was given in one dose on alternate days. Dyspnœa was relieved on the first day of administration, asthma was checked, and fine râles were heard over the chest, and free expectoration followed. After from twelve to fifteen injections a very perceptible improvement occurred, which persisted for weeks, and often for more than a month.

Riess also believes that the drug is of the greatest use in asthma. Its good effect is probably produced here by its power to secure the expulsion of crystalline and spiral bodies which form in the finer bronchi, and also to prevent their recurrence. In pneumonia, after the acute stage has passed, resolution may be hastened by pilocarpine. It will also relieve and hasten the spasms of whooping-cough. The dosage has been described. Riess has never given adults more than $\frac{3}{10}$ of a grain at a dose; with children he has never exceeded $\frac{3}{20}$ of a grain. With such doses no especial diaphoresis is produced, and need not be hastened by a warm pack. The subcutaneous method is far the best.

PYRIDINE TRICARBOXYLIC ACID AS AN ANTIPYRETIC AND ANTIZYMOTIC.

Pyridine, as is generally known, is one of the products of coal-tar, and it also occurs in the dry distillation of nitrogenous carbon compounds, and may likewise be obtained

when some of the organic alkaloids are distilled with the caustic alkalies.

According to a statement of DR. C. J. RADEMAKER (*Medical Herald*, June, 1887), pyridine tricarboxylic acid ($C_5H_2h(Co_2H_5)$ may be prepared by completely oxidizing quinine by means of permanganate of potassium; filtering the solution from the precipitated carbonate of manganese, and separating the carbonate of potassium from the solution by means of tartaric acid. The solution is again filtered in order to separate the bitartrate of potassium, and evaporated at a low temperature until a pellicle forms and set aside to crystallize.

Pyridine tricarboxylic acid crystallizes in plates with one and a half molecules of water; it becomes anhydrous at a temperature of 115° to 120°; chars and melts when rapidly heated to 250°, with decomposition; at 180° it already breaks up into carbonic and cinchomeronic acid. Pyridine tricarboxylic acid is very soluble in water, but insoluble in alcohol, has a neutral reaction to litmus-paper, and a slightly bitter taste, which is not disagreeable, and does not remain long in the mouth. When this compound is distilled with caustic lime, pyridine distils over. To ferrous sulphate pyridine tricarboxylic acid gives a red color.

Pyridine tricarboxylic acid, when given in doses of 5 grains to cats or dogs, produced marked decrease of temperature and diminished cardiac action without muscular debility. It seemed to have no poisonous effect whatever in these doses. In larger doses it had a still more sedative effect. It produced no derangement of the stomach or bowels, but it slightly diminished the rate of breathing; the only organ that it stimulated was the kidneys; and the drug was readily recognized in the urine by its reaction with ferrous sulphate. This drug also prevents and stops fermentation and putrefaction when commenced, and when a few grains of it are placed in a jar containing the bacillus butyricus and gonococcus they shrivel up and lose their power of reproduction. From its physiological action on the lower animals the conclusion necessarily follows that pyridine tricarboxylic acid is a powerful antipyretic and antizymotic, and that it is indicated in all diseases requiring sedative and antizymotic treatment.

In malarial diseases this drug acts better than quinine; it does not produce that cerebral disturbance, such as ringing in the ears, dizziness, and the so-called quinine intoxication. It is much more readily taken, and produces no derangement of the stomach and bowels. Ten grains of it will generally suffice to break up the paroxysms. It may be given in solution or pill form. The form in which Dr. Rademaker generally administers it is the following:

℞ Pyridine tricarboxylic acid, gr. xxxii;
Syrupi aurantii, ℥ii.
M. ft. et Sig.—Teaspoonful every two hours, commencing twelve hours before the expected attack.

But it is in asthma, especially in that form of asthma called spasmodic, that this drug works wonders; 1 or 2 grains administered during paroxysms cuts the attack short almost immediately, and when given before the expected attack it generally prevents the paroxysms. This drug contests every inch of ground with its rival, the iodide of potassium. In asthma depending upon organic lesions it may be considered as inert.

In pertussis, also, this medicine has a power of controlling the paroxysms and cutting short the disease. During the last endemic of diphtheritis Dr. Rademaker gave this drug a fair and impartial trial in this very dangerous disease, and its administration was attended with such marvellous results that under no circumstances would he resort to any other treatment in the future. Of course local treatment was not neglected.

In typhoid fever, when the temperature rises above 104° F., this medicine acts better as an antipyretic than the cold bath or quinine, the temperature remaining longer lower, and by comparative analysis of the urine there is less waste while this drug is administered. This is his experience of the action of this medicine in not less than one hundred and fifty cases of typhoid fever in the last three years. In hectic, also, this drug diminishes the temperature and gives the invalid a comfortable night's rest. Of course the medicine is not curative in these diseases, but very palliative. And last, but not least, it may be considered a specific in gonorrhœa, when used as an injection, no other treatment being necessary.

SUBCUTANEOUS INJECTION OF COCAINE IN SURGICAL PRACTICE.

In the *Vratch*, No. 50, 1886, p. 892, DR. F. J. BARSKY, of Kharkov, writes that subcutaneous injection of cocaine is extensively used in the clinique of Professor W. F. Grube as an anæsthetic in cases of removal of superficial new growths, such as sarcomata, fibrosarcomata, lipomata, carcinoma of jaw, epithelioma of lip, atheromata, etc.; also in cases of

simple incision, scooping out with a sharp spoon, cauterization, destruction of hæmorrhoids with Paquelin's thermo-cautery, radical cure of hydrocele, removal of foreign bodies (needles, etc.), amputation of fingers, evulsion of nails, rhinoplastic and osteoplastic operations, gouging out bone, etc. The result of those observations may be summed up as follows: 1. An injection of 5 centigrammes of cocaine is sufficient to produce complete anæsthesia of an area measuring from four to six square centimetres. 2. Anæsthesia is complete in five to seven minutes, and lasts from twenty to thirty minutes. 3. Tactile sensibility is preserved, but only to a very slight degree. 4. Artificial local anæmia, produced by pressure with a drainage-tube or otherwise, seems to intensify the anæsthetic effect. 5. The dose used varied between 1 centigramme (a syringeful of a one per cent. solution) and 2 decigrammes (four syringefuls of a five per cent. solution), but those most often employed were 5 centigrammes and 1 decigramme. As a rule, the doses up to 12 centigrammes did not produce any general effects; but in a nervous woman, aged 38, with sarcoma of the parotid gland, 8 centigrammes gave rise to formication and numbness over the body, paleness of the face, giddiness, weakness of the pulse, dryness of the mouth and pharynx, difficulty of swallowing, dyspnœa, oppression in the chest, and vomiting. In a strong peasant, aged 45, with dry gangrene of two phalanges, 1 decigramme produced only dryness of the mouth; 12 centigrammes caused only a slight acceleration of the pulse; 15 centigrammes produced, in from ten to twenty minutes, acceleration and weakening of the pulse, dryness of the mouth, sometimes giddiness and pallor, and once a condition resembling syncope. A dose of 2 decigrammes, in an anæmic girl, aged 13, in whom the os calcis was scooped for caries, gave rise, in fifteen minutes, to dilatation of the pupils, and on the next day to headache and general malaise. 6. Inhalation of amyl nitrite (1, 2, or 3 drops, on a piece of cotton-wool) seems to be the best physiological antidote to cocaine; its action manifests itself very rapidly after a few whiffs. 7. The osseous system, even in its superficial parts, is very incompletely anæsthetized by cocaine. 8. Cocaine has no influence on the process of healing. 9. Cocainization presents many advantages compared with other local anæsthetic agents, the chief ones being rapidity of action, ease of application, harmlessness in regard to the tissues with which the drug comes in contact, and convenience for use in regions which are inaccessible, or nearly so, to other local anæsthetics. 10. Cocaine will supersede chloroform in many cases, as in cardiac or pulmonary disease, etc., or where the use of chloroform is difficult owing to the position of the patient,—for example, that *à la vache* in operating for hæmorrhoids, etc. Professor Grube and Dr. Barsky have lately tried with success a combination of cocaine with morphine, as recently recommended by Professor Schnitzler.—*British Medical Journal*, June 25, 1887.

IODOFORM INUNCTION IN MENINGITIS.

In the *Practitioner* for May, 1887, Mr. R. C. Holt publishes notes of five cases of meningitis occurring in children, in three of which cases success followed the employment of an ointment containing ten per cent. of iodoform rubbed into the shaven scalp. In the three successful cases the bones of the head had not coalesced, and in all the cases the treatment was not commenced until the disease was well marked. The results appear to encourage the further trial of this treatment, and as soon as possible after the diagnosis is made.

A NEW METHOD OF TREATING LOCAL TUBERCULOSIS.

At a recent meeting of the Society of Physicians of Vienna, Kolischer, one of the clinical staff in Albert's surgical clinic, reported his investigations with acid calcium phosphate injected into tuberculous joints. He based his experiments upon the process of calcification, which occurs when tubercular matter becomes innocuous, and reasoned that the agent selected would conduce most to such a process. He also cited cases where an inflammation set up in tubercular joints by fracture or other causes had destroyed the tuberculous process. A concentrated solution was used, because the quantity of dilute solutions required permitted an easy escape of the fluid. Prompt healing of tuberculous joints followed in from four to six weeks. The reaction which was produced was decided as a general rule, but at times was very slight. The difference in the behavior of the tissues led to a division of the cases into two classes,—one in which an inflammatory reaction, which obliterated the tuberculosis, followed promptly; the other, a gradual calcification, resembling the healing of tubercle,

seen in lung-tissue. Where necrosis was in progress it was expedited, and pus and necrosed bone were discharged freely. Enlarged lymphatic glands were observed to rapidly diminish in size, and shared in the contracting process. A peculiar demarcation, resembling the line of gangrene, was observed at the edges of the injection; and ulcers, after the separation of the slough, showed a base of clean, red granulations, which healed very rapidly.

The first case exhibited was that of a girl who had suffered tuberculosis of the elbow-joint. The position had been anchylosis at a right angle. The integument had been very painful and sensitive; the olecranon could not be felt. After injection a stage of reaction and fever followed, succeeded by a period of hardening. Complete absorption followed in three weeks, the possibility of passive motion.

A second case of tubercular joint-disease had also a stage of reaction, hardening, and absorption. There was remaining only a small hard mass, which would soon, Kolischer thought, be absorbed. He had observed that cases in which the process of tuberculosis was most acute responded most promptly to the remedy.

In a third case the site of the disease was the outer site of the ligamentum patellæ; the tubercular tissues had completely disappeared, and the joint was fully restored. While the first three cases had been those of patients comparatively young, the fourth was the case of a well-marked tubercular process in the hand of an adult: the result was also favorable.

In these cases, which were those of ginglymoid joints, it was observed that necrosis of the fascia about the joint occurred; the final result was a more rapid separation of the necrosed fragments and a quicker healing with good motion. In the first of his investigations the reporter made parenchymatous injections of chloride of calcium; this occasioned such violent reactions that it was abandoned; and acting upon the researches of Freund, a Vienna chemist, the solution of calcium phosphate, containing an excess of the phosphoric element, was substituted.

Kolischer thought the phosphoric acid the potent element, and the calcium an adjuvant whose work was not explained.

Professor Albert, in whose clinic the experiments were made, considered the results worthy of careful consideration. In the beginning he had been sceptical as to the results, but he was convinced that "there are facts new and worthy of consideration." He recalled his experiments in igni-puncture in localized tuberculosis, and said that good results could be thus obtained, but not mobility in diseased joints, which was certainly a great desideratum.—*Wiener Medizinische Blätter*, May 26, 1887.

Reviews.

Cyclopædia of Obstetrics and Gynæcology: the Pathology of Labor; the Uses of Ergot. Vol. III. of a Practical Treatise on Obstetrics. By Dr. A. Charpentier. In four volumes, two hundred and forty-eight fine wood engravings.
New York: Wm. Wood & Co., 1887.

This volume opens with Part VI., and contains three chapters,—the first on maternal dystocia, the second on dystocia due to the fœtus, the third on ergot and its uses. The second chapter contains a section on monstrosities, profusely illustrated, which adds very much to the value of the work. The chapter on ergot and its uses is an exhaustive study of this drug. The author adopts as his own Pajot's law, "As long as the uterus contains anything, be it child, placenta, membranes, clots, never administer ergot." This is very sweeping, and relegates ergot to the museum of defunct drugs, so far as obstetrics is concerned. He gives it simply for inertia, after the termination of the third stage. Now, while ergot should be rarely, if ever, given while the child occupies the uterine cavity, the case of clots is a different matter. Suppose we resolve to turn out the clots, is there any harm in administering ergot before we begin the operation? Do we not gain time in that way and prevent the rapid formation of other clots, remembering that from ten to twenty minutes will elapse after ergot is given by the mouth before its physiological effects are manifested?

While the child is yet *in utero*, the author fears retraction of the cervix; while the placenta is there he fears its retention; with clots he argues in the same way; while in placenta prævia it is far inferior to the tampon. Now, there may be many dangers precipitated by ergot, and as a substitute for the forceps it is certainly a failure, but one who has for many years given ergot freely as the head passes the perineum, and given it as a matter of routine, without finding any difficulty with the placenta, who has given it often before beginning the effort to turn out clots

from the uterus, and has had no difficulty, feels that the danger of the drug is somewhat exaggerated. The editor gives place to diverse views of various American writers on the subject, and himself inclines to the belief that the author is about right. E. W. W.

CYCLOPÆDIA OF OBSTETRICS AND GYNÆCOLOGY: OBSTETRIC OPERATIONS; PATHOLOGY OF THE PUERPERIUM. Being Vol. IV. of a Practical Treatise on Obstetrics. By Dr. A. Charpentier.
New York: Wm. Wood & Co., 1887.

This last volume of the four comprised in the practical treatise on obstetrics is perhaps the most practical and useful. With its profuse illustrations and its aim to cover the whole ground fully, the student will turn to it for a full exposition of the operative treatment of labor. The subject of version in the early chapters is both well described and well illustrated. The second chapter is devoted to the forceps. We have pictured the usual row of obsolete instruments, beginning with Chamberlen's. "Classic forceps" are next described, and at last we come to traction forceps, the development of which is carefully studied from the first instrument of Joulin to the new tractory of Joulin and Poullet, the latter of which is depicted "in action,"—a very proper expression all will agree after seeing the illustration. The Tarnier forceps is studied from its first rudimental form, or rather idea, up to the complete and valuable instrument of to-day, with its mechanism and the application of its principles to other well-known forceps. The author's "Indications for the Forceps" are sound and progressive. The "conditions requisite for the application of the forceps" are given as four,—a dilated or dilatable os, ruptured membranes, the head presenting, the pelvis not too contracted. But the author does not exclude the applications of instruments to the pelvic extremity. When the hand cannot reach the feet, it is justifiable and its "dangers much exaggerated." If we have a rigid cervix and great urgency, "we must without hesitation nick the external os in several places." The author advises version when the head is above the brim in a small pelvis, but forceps in a deformed one. The only comment the reviewer would make on the section of the book just noticed is, that if the author wrote his views in plain language the translator has failed to make them perspicuous, and the student taking this chapter as a guide must use considerable discrimination.

In applying the forceps the author advises the French method, to the sides of the child's head, as opposed to the English and German, of applying the blades to the sides of the pelvis. Of course, with the head transverse, this method is valueless, and the other nearly so, and in such cases he applies the instrument with its blades "obliquely both to the head and pelvis" as a compromise measure.

Forced locking of the blades he is absolutely opposed to, or even "rotating them inversely to bring them to the same plane." "The rule should be to begin over, a hundred times if need be." The author treats largely in his description of instrumental extraction of the Tarnier forceps, and its relative advantages and disadvantages. He says of it, p. 107, "It is in particular in the cavity and at the inferior strait that the forceps can be used to the greatest advantage, and here the classic forceps can exert traction better in the axis of the pelvis;" and "at the superior strait the classic forceps and that of Tarnier present the same disadvantages,"—they "cannot make traction backwards." "Do we make traction" with the Tarnier "in the pelvic axis?" he asks. "Not at all at the superior strait, only a trifle in the cavity and at the inferior strait, since it is impossible to know the mathematical axis of the pelvis." This is sad, since these forceps are supposed to do this very thing. He adds, however, "Nevertheless, the younger French practitioners are daily making greater use of the Tarnier instrument," and in England "Alexander Russell Simpson has adapted the principle of axis traction to Simpson's forceps." It was not without cause that we considered the chapter as mixed and misleading. The above quotations will explain the author's state of mind, but will furnish but a poor guide to the inquiring student. The editor, however, comes to the rescue, and condemns the author's views as quite different from his own and those of many others in this country. Indeed, a very brief experience of the Tarnier forceps will, we think, satisfy any intelligent observer that they make backward traction vastly better than forceps of the older pattern. Let the experimenter, after applying them, try making traction with the hands, or with ordinary forceps, and then with the tractors, and see under which effort the most progress is made. Oftentimes a head absolutely unyielding in the former case will, when the tractors are used, descend easily and rapidly.

Chapter v. is upon "the Induction of Premature Labor." The author, after studying the indication for this procedure, describes carefully the many methods advocated by many

men. He prefers over all that of Krause, inserting a gum elastic bougie between the membranes and uterus, and leaving it *in situ* until dilatation is sufficient.

The remaining chapters are on Cæsarian section, Porro's operation, and embryotomy. The last part of the volume, Part VIII., which finishes the work, is upon the "pathology of the puerperium," and contains chapters on the "pathogeny of puerperal fever," "forms of the disease," "pathological anatomy," "prognosis" and "treatment of puerperal diseases." In the last chapter we find the remark made that it appears from experience "that women who have resided in maternities a certain length of time before delivery are less likely to contract puerperal affections than those who enter in labor or a few days before." The former are acclimatized. Throughout the chapter the author's idea of disinfectant processes is confined entirely to carbolic acid. This the editor explains by saying that at the time of writing corrosive sublimate had not yet replaced carbolic acid. Between author and editor the reader will find the whole question carefully discussed, and forming a valuable and proper conclusion to a work of this character. While in many points the author throughout the four volumes is at variance with what is almost axiomatic among us, and in agreement with much that we consider obsolete and outgrown, yet this is not because modern methods and modern thought are unknown to him, but rather because he prefers the old ways to the new, though giving the new generally a fair field, and leaving the reader to decide adversely to himself if he choose. For the book is modern, after all, and out of it may be gleaned many a valuable suggestion and much useful wisdom, which elsewhere might be sought in vain.

E. W. W.

HANDBOOK OF MATERIA MEDICA, PHARMACY, AND THERAPEUTICS. By Saml. O. R. Potter, M.A., M.D. Philadelphia: P. Blakiston, Son & Co., 1887.

The author has aimed to embrace in a single volume the essentials of practical materia medica and therapeutics, and has produced a book, small enough for easy carriage and ready reference, large enough to contain a carefully-digested, but full, clear, and well-arranged mass of information. He has not adhered to any pharmacopœia, as is the case of certain recent manuals, thereby limiting his work, and in this day of new remedies causing constant disappointment, but has brought it up to date in the most satisfactory way. No new remedy of any acknowledged value is omitted from his list. Under each the section on physiological action and therapeutics has been written with care. Part I. of the volume, devoted to materia medica proper, ends with an elaborate chapter on the "Classification of Medicines." Part II. is devoted to "Pharmacy and Prescription Writing," and contains information which it is very hard to acquire elsewhere than by practical work and precept. Part III., on "Special Therapeutics," consists in an alphabetical arrangement of the diseases and diseased conditions, each being followed with a concise summary of the lines of treatment which have been found of value. This part, while it may strike some as tending to create superficial therapeutists, will be of great service to the already experienced, stimulating the tired brain, and easily recalling forgotten drugs and forgotten methods. In the enumeration of drugs suited to different disorders a very successful effort at discrimination has been made, both in the stage of disease and in the cases peculiarly suited to the remedy. It is no mere list of diseases followed by a catalogue of drugs, but is a digest of modern therapeutics, and as such will prove of immense use to its possessor.

E. W. W.

HOW TO STRENGTHEN THE MEMORY, OR NATURAL AND SCIENTIFIC METHODS OF NEVER FORGETTING. By M. L. Holbrook, M.D.
New York: M. L. Holbrook & Co.

How unpleasant to never forget! how annoying to never remember! and that forgetfulness is as useful at times as memory the author admits in his chapter on "The Art of Forgetting." Injuries, for instance, and injustice, disgusting sights, all the unpleasant and little disagreeables of life, are so much better forgotten. Men become pessimists by remembering, optimists by forgetting them, yet a good memory is a very desirable thing. The mind evidently may be well stored, yet wellnigh useless to its possessor if good memory be absent, for memory is the faculty which brings out of the storehouse of the mind what we need, when we need it. The author asks, "How do we remember?" and casts a fine sneer at the physiologist, who speaks of the brain "registering impressions." Yet what else can it do? Did the author ever ponder upon that wonderful toy the "speaking phonograph," and see how it records so minutely and from so little apparently, and reproduces so much? How the dent in the foil, so

nearly invisible, yet possesses the power of throwing back a volume of sound modulated, articulated, and with the recognizable tones of the speaker?

What every one desires is a practical memory suited to his own needs. The memory of the soldier would not suit the historian; the memory of the lawyer might fail the business man. Now, the author thinks that if one follows the lines of study which he indicates he may be reasonably sure of a fairly good working memory.

The question of capacity is one of great practical interest. Does the overwrought child use up and fill with useless things its storage capacity in early life, leaving less room for more important things afterwards? This is a question for the educator, but the educator will never solve it if left to his own devices, for a sort of judicial blindness settles upon him when he begins his work, and deepens as his life goes on. The teacher never sees the overcrowded child, never realizes what the author believes, that fatigue impairs the memory, believes evidently that memory itself is the grand central faculty of mind, and views the parrot with admiration, as the type of all that is good and great in humanity.

Many parts of this book will prove interesting, even to those whose memories are excellent, and who need no additional training. The pages abound in brief but pungent sentences, and indirectly touch upon a multitude of topics of interest. E. W. W.

EVACUANT MEDICATION; CATHARTICS AND EMETICS. By Henry M. Field, M.D., etc.
Philadelphia: P. Blakiston, Son & Co., 1887.

No matter how great progress man may make in the vast future, he will probably always require some cathartic. Noses may wither away under catarrh, eyes fail from too early and steady use, ears become dull under the incessant clatter of civilized life, teeth vanish as food becomes universally peptonized and malted, but the bowels will remain. The finer the food, the more constipated they will become. The more the brain acts the less will they. Mechanism may make mechanism, and arms may wither, rapid transit may substitute natural locomotion, and legs may dwindle, but still will the compound cathartic pursue its meandering way, and castor oil its sinuous track. He who would prepare for the practice of the future must study cathartics. Purgation will some day be the grand specialty.

In preparing for that day, such books as Dr. Field's "Cathartics and Emetics" are invaluable. The graduate of a day imagines himself skilful in compounding a pill, the aged practitioner considers himself a master of purgatives, but let them read the work of a real master and blush, for in this little book is gathered together all peristaltic lore. By conning its pages one can learn just what purgative to use and just when to use it, the danger, the safety of each, the power and the peril of combination. It is by such practical knowledge of what some call little things that the physician prospers, while the mental giant, the grand, highly-educated product of modern medical study, who has attended the schools of Europe and America, has seen everything and done everything, pines in solitude behind his silver sign and withers day by day. E. W. W.

A TREATISE ON DISEASES OF THE SKIN, WITH SPECIAL REFERENCE TO THE DIAGNOSIS AND TREATMENT, INCLUDING AN ANALYSIS OF ELEVEN THOUSAND CONSECUTIVE CASES. By T. McCall Anderson, M.D., Professor of Clinical Medicine in the University of Glasgow, etc. With colored plates and numerous other illustrations.
Philadelphia: P. Blakiston, Son & Co., 1012 Walnut Street, 1887.

The oft-felt need of a full, complete, and yet not too voluminous work on diseases of the skin seems to have been well met by the author of this work. Adopting the classification of Willan, there is given a concise yet vivid description of the various primary and secondary lesions of the skin. Under the heading of classification he divides skin-diseases into the two great classes of functional and organic, and gives an analysis of ten thousand consecutive cases met with in hospital practice. After which we find a further analysis of one thousand consecutive cases met with in private practice. We may remark that in the former, out of ten thousand we find two thousand five hundred and twenty-seven of scabies, while out of the one thousand private cases but forty-four.

Under pruritus the author mentions the pruritus hiemalis of Duhring, a disease which seems to have been universally attributed to the cold weather of cold climates. "It appears to result from cold," the author says, and yet it may possibly result rather from the means taken in cold climates to avoid cold. In so many cases it seems to appear with the putting on of warm woollen garments next the skin and disappear when they are discarded, and with others to be always temporarily re-

lieved by a warm bath; that in the latter it may possibly be due to the cessation of daily bathing. Certainly in most cases the skin will be found dry, not scaly, but smooth and dry, almost polished, and the perspiration tardy in appearing. These cases are often relieved by directing them to wear a thin muslin garment under their winter flannels, next the skin.

In Addison's disease the author describes his own treatment by antistrumous remedies, having noticed how frequently in autopsy the suprarenal capsules were the seat of a scrofulous affection. These measures, combined with blisters over the renal region, have in his hands been of great service in arresting the defect of coloring-matter, clearing up the skin, and improving the general health.

In hirsuties, electrolytic destruction of the hair-follicles offers the only useful means of treatment.

In alopecia areata the author coincides with those observers who have failed to discover a parasitic element, while admitting that the disease "presents all the other characteristics of a parasitic affection." He therefore regards it as a nervous affection. Turpentine and ammonia are the two remedies on which the author relies most.

Under canities we find described a new hair-dye, accidentally discovered by the author, which consists in the use of a solution of bichloride of mercury, gr. ii to ℥i, for a few days, and following with one of sodium hyposulphite, ℥i to ℥i, a few applications making the hair nearly or quite black, without staining the skin or clothing.

The chapter on "Eczema" covers one hundred and nine pages, and is extremely valuable. While believing that in many cases the digestive disturbances so common in eczema are but manifestations of one and the same cause, the author does not deny that eczema may be caused by digestive derangement, and in these cases "the parts most frequently attacked are, as Hebra has pointed out, the face, lips, anus, and hands." Deficient excretion he considers a fruitful cause of the disease, as is also the gouty diathesis and the rheumatic. With regard to the treatment of this affection, the author says, "With some exceptions there are few diseases more curable than even the severe forms of eczema," and "there are many ways of arriving at the same goal." A combination of local and constitutional treatment is generally the best. A long course of purgatives and aperients is injurious, "except in cases entirely dependent upon digestive derangement." Purgatives may apparently cure many cases, which reappear when they are stopped and flourish "again as luxuriantly as ever." Mercurials are useful in liver torpidity. Small doses of gray powder, combined with rhubarb and salicine or quinine, or sulphate of magnesium, combined with a preparation of iron. When the patches of eczema are indurated, corrosive sublimate in small doses, combined with basle, is sometimes useful, but mercurialization is to be avoided always. The sulphur treatment is less valuable than the mercurial. In functional derangement of kidneys diuretics are useful.

The general internal treatment "radiates in two directions,—for the robust, for the anæmic and strumous." In the latter iodide of iron and cod-liver oil, phosphorus, good food, stimulants, cod-liver oil inunctions. In the robust cases, or those apparently so, local scarification and cupping may be useful, especially if the lower extremities are affected and the patches acutely inflamed. Of nervetonics, strychnine and arsenic are the useful ones. The author is not one of those who discard arsenic, like a recent authority, who considers it useless, but he limits its sphere to those who can take it without deranging the digestive organs, without the aggravation of itching and heat, which often occurs in acute eczemas, and would withhold it if herpes occurs until the rash has disappeared. An adult may take 3 to 5 minims thrice a day, and gradually increase. Aggravated irritation of the eyes and puffiness of the face, especially if anorexia, pains in the head and stomach, nausea, and bronchitic irritation appear, are good reasons for diminishing its dose. He quotes Dr. Jas. Begbie, who says, "Arsenic is a remedy too often suspended or abandoned at the very moment when its curative powers are coming into play." There is a great liability to take cold while taking arsenic, and a tendency to the development of bronchitis. During or after meals is the time to take it: in bitter infusion when the stomach is weak; with a little morphine when it provokes diarrhœa. As the disease yields, gradually diminish. The author advises us not to tell our patients that they are taking arsenic.

Alkalies are useful when the patient is addicted to stimulants, and constitutionally inclined to rheumatism or gout. The carbonate of ammonium, in doses of from 5 to 40 grains, three times a day, is the author's favor-

ite. Tar, internally, in doses of from 2 to 40 drops, given in syrup or pill. When given in drops, the author adds to it one-eighth part of rectified spirit, to enable it to be dropped.

The local treatment: first remove all crusts by oil, by poultice, or by vulcanized india-rubber dressings. When itching, swollen, and irritated, dust with the mildest powder, talc, starch, zinc oxide, calcium, or white fuller's earth. Add to any of these a little powdered camphor to "allay the burning heat." Many formulæ are given for soothing ointments. For the chronic condition, potash applications, the various soaps, cold water, always using soft water. For itching, lotions of dilute hydrocyanic acid. In regard to tarry preparations, the author considers them contraindicated when there is any necessity for soothing applications. Tarry lotions, like the inunction of green soap with tar, he considers best of all. Mercurial applications he believes to be of great service; sulphurous preparations seldom are. The oleates evidently find favor with him. The dressings of vulcanized rubber, while occasionally worse than useless, are generally of very great benefit. They also may be used with the various other modes of treatment. For disease of the "ears, brow, nape, and extremities" an ointment of chrysophanic acid is recommended, and for limited eczemas blistering has no rival. The blister employed by the author is a solution of mercurial bichloride ʒi to alcohol ʒi, or cantharides.

The author's treatment for erysipelas consists mainly in feeding. Quinine and iron he uses as in any other disease, if called for.

In urticaria, where the cause cannot be discovered and avoided, and the eruption continues to crop out, the author thinks that atropine and potas. bromid. pushed to physiological effect are next to be depended on.

We have given somewhat extensively the author's treatment of a few forms of cutaneous disease, but space would fail to mention more. The reader, however, will be attracted more and more by the practical tone of the book and by the author's evident mastery of his subject. We can think of no better work for the practitioner on the subject.

E. W. W.

CHEMICAL LECTURE NOTES. Taken from Prof. C. O. Curtman's lectures at the St. Louis College of Pharmacy. By H. M. Whelpley, Ph.G., etc.

St. Louis, Mo.: Published by the author, 1886.

These notes were evidently first taken for "Quiz" purposes, but, enlarged and perfected, form the basis for an excellent course of lectures on chemistry. They mirror the actual class and class-room surroundings, the audience, the lecturer, the successful eye-taking experiments. They are well illustrated in regard to the apparatus employed, and would furnish an excellent text-book for a novice in lecturing. To the student these notes will prove useful, and from their form may impress themselves all the more vividly upon the memory.

HANDBOOK OF DISEASES OF THE EAR, FOR THE USE OF STUDENTS AND PRACTITIONERS. By Urban Pritchard, M.D. Edin., F.R.C.S. Eng., Professor of Aural Surgery at King's College, London, etc. With illustrations.

Philadelphia: P. Blakiston, Son & Co., 1886.

A good, compact, and reliable handbook of this kind is always useful, and can always find a place, provided its author knows his subject well and inspires confidence. Too many manuals are the work of babes for babes, the first flight of the medical fledgling ere he soars to more ambitious work. This book, however, is not the production of a novice, and is extremely good, simple, and plain to understand, has good illustrations, as far as they go, can be carried in the pocket, and tells, after all, about all there is on the subject worth while knowing.

E. W. W.

DE L'ENDOMÉTRITE ET DE SON TRAITEMENT. Par J. A. Doléris, Ancien Chef de Clinique d'Obstétrique et de Gynécologie de la Faculté, Accoucheur des Hôpitaux, etc. Paris, 1887.

This brochure of seventy-two pages is a reprint of a series of articles published during the past winter in the *Nouvelles Archives d'Obstétrique et de Gynécologie*, describing M. Doléris's treatment of endometritis.

The author considers the most frequent cause of this disease to be septic infection at parturition or abortion. He does not consider uterine enlargement under the names subinvolution, chronic hypertrophy, hyperplasia, engorgement, and congestion to be the results of a true endometritis; but, holding that there is no inflammation without septic infection, he considers a septic process whose seat is the endometrium, and whose effects are manifested by structural changes in this and related tissues, to be endometritis. Metritis is described as a sequela, and the persistence of endometritis is explained by its analogy to chronic posterior urethritis. The implication of all the tissues connected functionally and anatomically with the uterus, the occlusion of the cervix, which favors reten-

tion of septic matter and produces spasm, and the displacements frequently occasioned, are clearly set forth, as are also the difficulties of spontaneous cure and the many causes militating against recovery. For the restoration of the normal condition of the endometrium he considers local treatment of the uterine surface and dilatation of the cervix indicated. The names and results obtained by those who have used the curette are reviewed, and the writer indicates the grounds upon which he bases his selection of an instrument for a particular case. He follows curetting by the use of the *ecouvillon*,—a spiral brush of varying degrees of stiffness, which he dips in glycerin-creasote, 1 to 3, and with which he cleanses the uterine cavity thoroughly. Antiseptic precautions, the after-use of iodoform and glycerin tampons, complete the treatment.

Especial stress, in the after-treatment, is laid upon maintaining thorough antisepsis in the vagina for a considerable time.

Dilatation of the cervix uteri is not considered indispensable in every case, but is thought very often highly advantageous and indicated. Rapid and gradual dilatation are described, and the advantages of each. For the disinfection of tents and other dilators for gradual dilatation the author has found immersion in a saturated solution of iodoform in ether sufficient. As an intra-uterine antiseptic and escharotic pure creasote in glycerin, 1 to 5 or 1 to 3, is preferred above all others; it is claimed that microscopic examination of tissues acted upon by creasote shows the preservation of their nuclei and their dialysant properties. In feeble solutions, 1 to 10 and weaker, creasote may be used as a general antiseptic. The results of this treatment in three hundred and thirty-nine cases are reported as follows: Endometritis of moderate severity, two hundred and eighty cases; chronic endometritis, with polypoid condition of the endometrium, forty-three cases; recent decidual endometritis, with retention of placenta or membranes, sepsis post-partum, sixteen cases.

The treatment was commenced from three to twelve months after the beginning of the disease; in no case longer than fifteen months.

In the greater proportion of cases the use of the *ecouvillon*, or brush, with creasote, 1 to 10 and stronger, was the treatment; other measures were used as indicated. The author claims that all the cases treated were cured without accident. E. P. D.

Correspondence.

PARIS.

(From our Special Correspondent.)

Tuberculosis propagated by Hens.—Common justice requires us to mind the health and welfare of the domestic animals whose natural instincts we have perverted to our own purposes; but neglect of such plain duty seems to be often followed by prompt punishment. That several diseases may be spread by the milk of unhealthy cows is a fact now well established; but hens, also, it appears, are apt to catch from man certain maladies, and to propagate them.

Dr. Lamallerée, at the Congress of French Scientific Societies, just held in Paris, related an instance of contagion which derives its chief value from the completeness of the history and clearness of the deductions inferable therefrom. In 1872 a young man, liberated from military service after he had been a prisoner of war, came to a small village, where he settled as a woodcutter. Although suffering from bronchitis, he married a young girl of the locality, but soon after he was taken with hæmoptysis, and died within a year after his marriage, leaving a child, rather delicate. The widow, who had been a strong, healthy girl, gradually became consumptive, so that in 1885 she had cavities in her lungs, profuse expectoration, and now she presents all the symptoms of an approaching end. Dr. Lamallerée was recently called upon to see a neighbor of the widow just mentioned, a young woman whose antecedents could not lead him to suspect tuberculosis. The patient, nevertheless, was found to suffer from incipient phthisis. After long questioning, it was ascertained that within some four months she had eaten eleven chickens bought from her neighbor, and as her strength was failing she had roasted them very slightly, hoping to thus get more nourishment. From her house the doctor stepped into the widow's, whose case he knew well, to ascertain how the hens were fed, how they had died, and whether they were in the habit of absorbing spittles. On this point he received prompt satisfaction. As he was walking into the house he heard the widow have a fit of coughing, and immediately a legion of chickens ran in, as they are wont to do when hearing the voice of the one who feeds them, and began to fight around the bed for the consumptive's spittles. One of the hens having died the same morning, Dr. Lamallerée took it home for examination, and

found in the animal seventeen soft tubercles; the liver was honeycombed with them, and the liquids contained many bacilli. In the foregoing case three steps of the contagion can distinctly be traced,—1, from man to man; 2, from man to animals; and, 3, finally, from animals to man. Before dismissing the subject, a word may be said on another new treatment of tuberculosis, or, rather, a new mode of applying an old medication,—namely, *inhalations of hydrogen sulphide in phthisis.* Dr. Frébault, of the Toulouse Faculty, prefers for obvious reasons the natural gas to that produced in laboratories, and direct contact with the lungs to any other method. He has established at the Luchon Hot Sulphur Springs, directly over the natural outlet, large inhaling-rooms, with appropriate air-circulation, in which patients may breathe the medicated vapor for any length of time that may be considered most beneficial by the medical attendant. It would be out of place here to relate the cures effected. But it is certain that with natural gas there is no danger of arsenical or other contamination to be feared from laboratory products; the patient has, besides, the benefit of pure country air, change of diet, etc. It must be conceded, also, that the method is one easily applicable to all hot sulphur springs, but the remedy is one that can only be afforded by rich people. The generality of patients may not be in such poor circumstances as the two women mentioned by Dr. Lamallerée, but the number of those who can visit watering-places is necessarily limited.

New anæsthetics are constantly brought to notice, and it must be admitted that those in present use leave room for improvement in more than one respect. At a recent meeting (May 31) of the Academy of Sciences Messrs. R. Dubois and L. Roux presented a memoir on the merits of ethylene trichloride as an anæsthetic. The substance in question, for which they use the name of *methyl-chloroform*,* is a chlorine derivative of ethylene, while ordinary chloroform is a methylene derivative. Its chemical formula is $CH_3—CCl_3$, and its ebullition-point 75° C. (167° F.). Methyl-chloroform was, a few years since, tried by Rabuteau on frogs and guinea-pigs, and dismissed as unsatisfactory after some experiments which Messrs. Dubois and Roux consider insufficient and far from convincing. They have experimented with dogs, and are of opinion that the chemical has certain advantages that might prove very useful in human medicine. They are as follows: The boiling-point being higher than that of ordinary chloroform, it saturates less rapidly the air breathed by the subject operated upon. The lower ebullition-point of chloroform, 61° C. (141° F.), is one of the most frequent causes of sudden deaths, as experiments prove that a dog will be killed within five minutes by a mixture of twenty-five per cent. of chloroform vapor and seventy-five of air, while eight per cent. of chloroform may be tolerated by the animal for a whole hour. The odor of the proposed anæsthetic, when pure, is sweet, and not penetrating or suffocating like that of ether and chloroform; it is not irritating, like chloroform, to the inconvenience of both the patient and the surgeon and assistants, and, unlike ether, burns only with difficulty. The experiments made so far with animals are very satisfactory, and Drs. Dubois and Roux hope to be soon able to complete the investigations necessary before they try the anæsthetic in human medicine.

A question long controverted, is whether *aniline derivatives are poisonous or not.* At first they were decided to be harmful. A little later on, as the poisoning accidents were shown to be due to arsenical impurities, coal-tar colors were simply declared dangerous, owing to the possible contamination. And now that the matter has been investigated closer, poisonous chemicals being avoided in the manufacturing processes, a whole class of the modern colors has been proved to be harmless, while others are only thought to be irritating. Messrs. S. Arloing and P. Cazeneuve have contributed a very elaborate and careful disquisition on a subject which may now be considered as settled, or nearly so. A previous investigation made by M. Cazeneuve, in connection with M. Lépine, had led them to the following conclusions: I. Although binitro-naphthol is toxic, as is picric acid, its congener, yet its sulpho-conjugated compound N S yellow (sodic conjugated binitro-naphthol yellow) is harmless. 2. Safranin and methyl-blue, without being exactly poisonous, are not quite harmless, as they irritate the intestinal tube. 3. Solid yellow (sodic sulpho-conjugated amido-azo-orthotoluol), roccellin red, Bordeaux red B, purple and ponceau R, orange I (all sulpho-conjugated derivatives of naphthol), and sulpho-conjugated fuchsine, are completely harmless for man, either in good health, or sick even

* This term appears to be a misnomer, and *ethyl-chloroform* more appropriate; nevertheless, as the memoir relates not to the chemical but to the medical properties of the substance, the name has been retained.

from Bright's disease. It will probably be noticed that all the harmless colors are sulpho-conjugated sodic combinations. The more recent investigations undertaken by Messrs. Arloing and Cazeneuve, and related at length in the *Revue de Physiologie*, were very searching and extensive. Having examined more especially the *roccellin red* and *Bordeaux red*, they have come to the conclusion that the two colorings in question are not toxic, except when given in very large doses. For instance, a pig took as much as 725 grammes (about 24 troyounces) within one hundred and forty-five days, 5 grammes of Bordeaux red being administered daily in the food; the animal throve and grew fat,—as usual with the porcine species when well fed,—and after death presented no lesion, renal or hepatic, of any sort. Dogs and asses were also experimented with, minute records of the cases being kept, and all the animals proved equally unaffected. Even when the colorings were injected directly into the veins, no intoxication proper could be observed; indeed, some common salts, like sulphate of potassium, for instance, which are considered harmless enough, are more dangerous than sulpho-fuchsine in intravenous injections. As regards the effect on human subjects, a man, aged 30, suffering from myelosclerosis, but with sound urinary organs, took as much as 6 grammes (1½ drachms) in one day of roccellin red; three nephritic patients took 1 gramme (15 grains) of it a day, for eight days, all without any noticeable effects. From the foregoing, Messrs. Arloing and Cazeneuve conclude that, considering the infinitesimal quantities necessary for coloring purposes, the substances in question offer no danger to public health. The legal toleration of 2 grammes of sulphate of potasssium to the litre of wine after plastering, is certainly more harmful, and it is proper that legislation respecting aniline colors should be revised.

Pellagra is becoming a sort of national calamity in Italy. It is reported to be now very violent and deadly in Lombardy and Venetia. As customary in such cases, the facts find their way in the foreign medical press, while at home they are carefully kept from the public. The disease is admittedly caused by the inferior quality of the bread, which is heavy, coarse, ill-made, badly baked, and generally supplied but once a fortnight. Within five years eighteen new hospitals have been created for the treatment of pellagra, but thousands of poor patients are left without medical attendance of any sort. And now, to make things worse, the Italian government is preparing a law avowedly intended to impede the importation of American breadstuffs, the inevitable effect of which will be to enhance the price of wheat flour. But a bitter feeling exists against American prohibitory tariffs, and retaliation comes before humanity.

PARIS, June 22, 1887.

APOMORPHINE IN CROUP.

To the Editors of the THERAPEUTIC GAZETTE:

GENTLEMEN:—Croup in young children is such a common disorder that it is generally treated by mothers and nurses with domestic remedies used by *their* mothers or grandmothers before them. It is only when the case becomes alarming and beyond their power that the physician is sent for. Last winter I was called out at night on several occasions to attend such cases. Knowing the valuable expectorant properties of apomorphine, I determined to give it a faithful trial. Dissolving ⅙ gr. (pellet form) in six teaspoonfuls of water, I administered a teaspoonful every five or ten minutes until emesis resulted. The second or third dose usually did the work. Where the child was past swallowing it was administered hypodermically (of course in less water). I also found vaseline or clean lard or oil rubbed on the chest and throat a valuable adjunct. The after-treatment is of great consequence. Quinine in small doses, with pilocarpine or syrup ipecac, combined with the celery compound, usually filled the bill to admiration. I have lost all dread of croup now if I only have my pellets of apomorphine with me.

Yours truly,

ALEX. F. SAMUELS, M.D.

LA CROSSE, WIS., June 29, 1887.

SANTONIN-POISONING.

To the Editors of the THERAPEUTIC GAZETTE:

GENTLEMEN:—In two numbers of the GAZETTE of the present year cases were cited in which serious poisoning was the result of the administration of santonin, having in each instance been given for the expulsion of worms. Will you allow me to add my mite on the subject? For one I am afraid of it, and only rarely use it. It so acts like a balky horse, which, after concluding to go ahead after a spell of stubbornness, will be as likely to smash

the carriage and kill the inmates as to quietly settle down into a respectable canter. The only certain thing about santonin in my hands is that it will poison the patient more or less, and throw the friends into the wildest frenzy. Fortunately, I have never lost a patient from its use. I never give more than 1 grain to a child, nor 2½ grains to an adult, combined with senna or rhubarb, followed in each by the same dose some twelve hours afterwards, and again in the same time by castor oil commensurate with the age of the patient.

My first case of poisoning occurred in my early years of practice, before I had ever heard or knew that such a thing could happen from its use. The child (of 5 years) had violent spasms at short intervals for several hours, unconscious most of the time, and for several days could not see. Her pupils were widely dilated. For safety she was kept in bed, and finally was thoroughly restored, minus forty round worms.

Five years ago, in my dispensary practice, an old Scotchwoman came to my clinic for a cough and severe and constant pain for two years in her right side just below the belt. She was 60 years old, and had grown stout from "lunching in order to quiet the pain." Constipation had become habitual. I gave her some compound liquorice powder, to take a heaping teaspoonful night and morning, and when she reported again in a week's time she brought an open-mouthed bottle with two tape-worms complete, each measuring nearly two yards. Her cough had disappeared entirely. I then ordered santonin in 2-grain powders, with powdered senna, at an interval of twelve hours, and these followed by castor oil. In twenty-four hours her sight was almost destroyed; pupils widely dilated, with sensations as if about to fall, and spasmodic respiration. I at once ordered a large enema of warm water, which produced a very large stool, in which three tape-worms were found, altogether measuring a little over five yards. Immediately her sight returned, but for a week everything was of a deep green color. I had her continue one dose of the compound liquorice powder daily for another week, when everything gradually returned to the natural order of things. She passed in all nine tape-worms, their total length being forty-three feet. In the course of a year her weight was reduced from two hundred and sixty pounds to one hundred and seventy-five pounds, and she became, as she expressed herself, "perfectly well again." I would add that four tape-worms were swollen and in a macerated condition. This was the only time that santonin ever aided me in my experience to expel tape-worm, and I have tried it frequently for this purpose.

Another case I had only recently. The lady had been voiding long round worms for several years, and she applied to me to rid her of them. I gave her 2½ grains of santonin with 10 grains of powdered senna, repeated in ten hours, each time about an hour after a not very full meal. She grew deathly sick, vomited freely several times, was dizzy, and "out of her mind" for two days; had painful and watery stools repeatedly for three days, and from the first dose everything was the color of an orange; pupils dilated, and limbs quivering. There were no signs of any kind of worms. She recovered completely in ten days.

I regard santonin as a very dangerous remedy, whether prescribed by physician or layman. I am safer (my patients also) with calomel and podophyllin, or senna and spigelia. I have very much doubted my wisdom in using santonin in the case of my old lady, after starting her tape-worms with the liquorice powder.

Very respectfully,

ODELIA BLINN, M.D.
202 WARREN AVENUE, CHICAGO, ILL.

"LOCAL NUMBNESS."

To the Editors of the THERAPEUTIC GAZETTE:

GENTLEMEN:—In the June number of the *Columbus Medical Journal*, 1887, an article appears called "Waking Numbness." Local numbness is a better term, for the reason that in this New Mexican climate the trouble is a very common one, and particularly during the winter and spring months, and on account of the attacks coming on not only during the night but frequently and at any hour during the day. It does not, as a rule, trouble any one during the day when actively exercising. The circulation is not generally disturbed. Motion is not interfered with, at least not in ordinary cases. It seems most frequently to attack the arms; in the lighter attacks but one arm or one limb; it may attack any portion of the body.

The attacks vary in duration from a few moments to several hours, particularly when they come on at night. Although I have seen many cases, and hear of a great number, have not as yet heard of or observed any serious results follow the attacks. I have been on the lookout for more than five years for something

on this subject in the different medical journals which I have come in contact with, not finding the matter discussed until now. I believe I have seen cases where the tongue was attacked, but did not recognize the trouble at the time as this curious neurosis. I have seen at least two extensive and violent cases in this city, both married ladies. Males are not exempt, although I find it much more common among women and more severe. I concluded tonics and stimulants, with local friction during the attacks, would give the best results.

ALBERT E. EALY, M.D.

ALBUQUERQUE, NEW MEXICO,
June 23, 1887.

ANTIFEBRIN AS AN ANTIPYRETIC.

To the Editors of the THERAPEUTIC GAZETTE:

GENTLEMEN:—Dr. Peter J. Martin in the May number of your GAZETTE has an article, with full tables of calorimetrical experiments, also tables of experiments on lower animals, of all the new antipyretics except antifebrin. I read this article with interest. Of late I have tried antifebrin with excellent result, it having a charming effect on my patients. I think it can well be classed with antipyrin and the other antipyretics. So far I think this drug an indispensable article in a physician's armamentarium. On the night of May 17, 1887, my partner was called to J. O., æt. 22, who was suffering from an attack of sporadic cholera morbus, vomiting, purging, and in much pain, and greatly prostrated. He was relieved by ordinary remedies, but for two or three days was weak and pale. The patient said he had eaten some wild honey near some yellow jasmine vines. Before he got strong and thoroughly over this attack he rode some distance in a buggy, and on returning home he got wet. On the afternoon of May 20 I was called to his bedside, and found patient's temperature 105°, tenderness over abdomen, and especially over ileocæcal valve, tongue coated, red around edges, and dry. He also experienced pain over lower part of right lung, with a dry, hacking cough; his bowels were loose also. My partner had prescribed quinine in 5-grain doses every four hours, with spts. terebinthinæ, 8 drops three times a day. When I saw him the first time he was in muttering delirium, wandering, etc. I did not change the treatment with quinine for two or three days, but increased the dose. Noticing an increase of head-symptoms, I discontinued the quinine and ordered antifebrin in 5-grain doses, dissolved in hot water, sugar, and rye whiskey, about ʒi altogether. I carefully watched the result, and was delighted with it. It invariably quieted the patient, and in two minutes by my watch he was dozing and in a good diaphoresis; the temperature was reduced on an average of about two degrees in a temperature of 104° or 105°. A pleasant slumber was produced every time it was administered, the action of the pulse was moderated and lessened in quickness. I noticed no depressing effect as I have seen with antipyrin. Antifebrin acted so charmingly in managing the temperature of this patient that later on I only gave it when the patient was restless and wandering in muttering delirium. Of course I nourished and stimulated all the time regularly. I tried, with a great deal of satisfaction to myself and benefit to the patient, Bush's Fluid Food, Bovinine, given with sweet milk. From the time I began the administration of the antifebrin I had very little trouble. The patient is now up and rapidly convalescing after about four weeks' sickness.

I have used antifebrin in several cases of teething children with loose bowels, restless, abdomen hot, and high temperature, where opium had been given to check the bowels. I gave the following prescription:

℞ Antifebrin, gr. xvi;
Hydg. cum creta, gr. x;
Liquorice powder, gr. xx;
Camphor, gr. xii;
Morphine sulph., gr. i. M.
Ft. in powder No. xvi.

Sig.—One every three hours in good whiskey and sweetened water.

These children have improved and been discharged.

F. W. P. BUTLER, M.D.

EDGEFIELD COURT-HOUSE, S. C., June 4, 1887.

Notes and Queries.

CROTON OIL.

It will be remembered that at an evening meeting in 1878 (*Pharm. Journ.* (3), viii. 705) MR. H. SENIER read a paper in which he reported that he had examined samples of English pressed croton oil that proved soluble in alcohol only in the proportion to the age of the sample, which was contrary to the recorded experience of Pereira and Redwood, and further that the portion soluble in

alcohol exhibited the vesicating property, while the insoluble portion appeared to be inert. Subsequently, in 1883, in another communication (*Pharm. Journ.* (3), xiv., p. 446) Mr. Senier gave his reasons for believing that while the vesicating property of croton oil resided entirely in the portion soluble in alcohol, the purgative property was confined to the portion insoluble. These conclusions not appearing satisfactory to Professor Kobert, the investigation was taken up by Herr von Hirschheydt, a pupil in the University of Dorpat. Upon the basis of the results obtained Professor Kobert now (*Chem. Zeit.*, April 6, p. 416) attributes the activity of croton oil, both as a vesicant and as a purgative, to crotonoleic acid, not to be confounded with crotonic acid, but an acid discovered by Buchheim in 1873, the formula of which has not yet been made out. This crotonoleic acid is said to occur in croton oil both in the free state, in which it is freely soluble in alcohol, and in combination as a glyceride. The glyceride does not possess poisonous properties, but the free acid acts as a powerful irritant to the skin and the intestines (purgative). According to Professor Kobert, the crotonolglyceride is attacked and split up like other glycerides by the ferments of the juices of the stomach, and the crotonoleic acid being set free then exercises its purgative influence. A similar result may be obtained by administering crotonoleic acid as a pill enclosed in keratin. Kobert is not of opinion, however, that the solubility of croton oil is dependent upon the proportion of crotonoleic acid it contains, but considers it to be connected with the age of the oil. Crotonoleic acid may be prepared by treating the portion of croton oil soluble in alcohol with a hot, saturated solution of baryta in a water-bath, washing the stiff white paste that forms with cold distilled water to remove the excess of baryta, and barium compounds with acetic, butyric, and tiglinic acid, removing by heat traces of water, and repeatedly treating with ether, which only takes up the barium oleate and crotonoleate. The crotonoleate is separated by dissolving it out in alcohol, decomposed carefully with sulphuric acid, and the solution containing the free acid evaporated. —*Pharmaceutical Journal and Transactions*, April 30, 1887.

POISONING BY PILOCARPINE.

Dr. A. G. Glinsky, of the Kharkov Alexandrovskaia Infirmary, reports (*Proceedings of the Kharkov Medical Society*, Part I., 1886, p. 109) a case of poisoning by pilocarpine,—the first of its kind, according to the writer, in medical literature. A gentleman who had been in the habit of using a solution of pilocarpine as a stimulant for the hair swallowed a considerable dose of the fluid instead of a solution of quinine. About five minutes afterwards profuse perspiration, first of the face and then of the whole body, set in, together with salivation. These symptoms were speedily followed by dimness of sight, prostration, trembling of the limbs, a sensation of cold, noise in the head, and a general sense of confusion. On seeing the patient, about an hour after the accident, Dr. Glinsky found profuse, cold, clammy sweat in big drops on the face and body, coldness of the limbs, slight cyanosis of the hands and lips, a subnormal temperature, pulse 84, full, dicrotic, respirations 14, profuse salivation, great contraction of the pupils, spasmodic shiverings, general restlessness, extreme weakness, and trembling of the lower extremities. The treatment consisted of the internal administration of tannin and emetics, together with the hypodermic injection of atropine ($\frac{1}{80}$ of a grain, given in three doses). A quarter of an hour after the injections a striking improvement took place; the perspiration ceased, the pupils became dilated, and tremor disappeared, and on the following day the patient was quite well. Dr. Glinsky adds that, in the period 1879–85, one hundred and sixty cases of poisoning by twenty-three toxic substances were admitted to the Alexandrovskaia Infirmary. In eighty-five of these, phosphorus matches supplied the poisonous material. He shows by statistics that this kind of poisoning finds an increasing number of victims in Kharkov every year.—*The British Medical Journal*, May 21, 1887.

A CHINESE ANÆSTHETIC.

A curious anæsthetic used by the Chinese has recently been made known by Dr. U. Lambuth in his third annual report of the Soochow Hospital. It is obtained by placing a frog in a jar of flour and irritating it by prodding it. Under these circumstances it exudes a liquid which forms a paste with a portion of the flour. This paste dissolved in water was found to possess well-marked anæsthetic properties. After the finger had been immersed in the liquid for a few minutes it could be pricked with a needle without any pain being felt, and numbness of the lips and

tongue were produced by applying the liquid to them.—*The Provincial Medical Journal*, June 1, 1887.

EXPERIMENTAL NEURITIS.

Hypodermic injections of ether are now so frequently employed, and with such good effect, that we are apt to forget that occasionally nervous lesions result from their use. Cutaneous anæsthesia, disorders of motility, and even serious trophic lesions have been observed, and the experimental researches of Arnozan and Salvat proved that the mechanism of these lesions was a peripheral neuritis. MM. PITRES and VAILLARD find, however, that some of the peculiarities of the action of ether on the peripheral nerves must have escaped the attention of the last-mentioned observers. We reproduce the salient points of this interesting communication. When an injection of half a cubic centimetre of sulphuric ether is made deeply into the cellular tissue which separates the muscles on the back of the thigh of a guinea-pig, there always results a paralysis of sensation and motion in the parts of the limb situated below the level of the injection. Generally the anæsthesia occupies the two outer toes and the outer aspect of the leg, but it may sometimes affect all three toes and the whole of the skin of the leg, probably because the injection has traversed the muscular interstices and attacked the crural nerve. After a few days these phenomena may be accompanied by œdematous swelling of the foot, ulceration of the toes and tarsus, falling off of the nails, etc. The anæsthesia and the paralysis are manifested immediately after the injection, and in a short time they have reached their fullest extent, and, once developed, they persist for several weeks, or even months, without either increasing or decreasing in severity. In order to study the mechanism of the action of ether, MM. Pitres and Vaillard have made a histological examination of the segments of the nerve situated above, below, and at the level of the injection of ether, and these examinations have been made on the sciatic nerve from animals after a survival of some hours, days, or several weeks. Above the zone of injection the nerve has always appeared absolutely normal; nothing like an ascending neuritis has been observed. At the level of injection the alterations varied according to the length of survival of the animal. When the nerve was examined some hours only after the injection, the nerve being teased after maceration for twenty-four hours in a solution of osmic acid, and colored by picrocarmine, eosine, or hæmatoxylon, the myeline is found to have become blackened and rather different from the bluish-black tint of normal nerve-fibres. Further, the lateral fissures are no longer to be seen, the axis-cylinder and nuclei of the interannular segments are not distinct, and it seems as though the nervous elements had become altered in their chemical composition. If the animal be killed six, eight, or ten days after the experiment, the segment of affected nerve shows the same changes; it is only after the fifteenth day that the altered fibres begin to undergo notable modifications; the myeline breaks up, and is slowly absorbed. Below the level of the injection the nervous tubules proceeding from the nerve-trunk affected by the ether undergo the Wallerian degeneration, which is well marked on the fourth day. The ether is therefore regarded as causing an immediate necrosis of the nerve-trunk at the site of injection. This was also shown by an experiment in which the nerve was first divided at its exit from the pelvis, and on the same day ether was injected into the lower part of the thigh of the paralyzed leg. Wallerian degeneration was found eight days after in the nerve, between the point of section and that of injection, and also below the latter, but in the area of injection the nerve had not undergone degeneration; the myeline was continuous and confounded with the axis-cylinder, and there were no traces of nuclear multiplication. Other experiments showed that an injection of the sulphuric ether could arrest the Wallerian degeneration at any point in its career. The same facts hold good with nitric and acetic ethers for guinea-pigs, rabbits, and cats. Hydrochloric ether has less severe effects. Formic and valerianic ethers have caused considerable local swellings and gangrene, thus preventing a proper examination of their action on nerves. The authors suggest that, in cases in which neurectomy or neurotomy is needed, injection of ether in the neighborhood of the nerve-trunk might serve equally well.—*The Lancet*, June 18, 1887.

GUACHAMACA TOXIFERA.

Guachamaca toxifera, one of the Apocynaceæ, will probably be restudied. SCHIFFER has already shown its superiority to curare in tetanus, rabies, and psychic surexcitations in general. It acts like curare in paralyzing the

peripheral terminations of the motor nerves, while having no action upon the sensory nerves or the muscles. Nevertheless, it is thought that the alkaloid guachamanine will have a much greater controlling power than curarine. One reason for the prevailing supposition that the alkaloids were chemically identical arose from the fact that they differed from other similar alkaloids in being wholly insoluble in absolute alcohol. According to recent researches by Böhn, curare has another alkaloid,—curine,—which is slightly soluble in water, and dissolves readily in alcohol. He says it, and not curarine, is the active ingredient of the aqueous solutions of curare. A curious fact about curine is that while it is wholly innocuous in doses of 5 to 10 mg., the product of its reaction with iodide of methyl is a poison of very great violence, even in minute doses.—*Pharmaceutical Record*, June 15, 1887.

ANTISEPTIC MIDWIFERY.

In a report by Dr. K. Inoieffs of the work done in the Lying-in Institution in connection with the Golitsinski Hospital in Moscow for the year 1886, the advantage of antiseptic midwifery, which is strictly carried out there, is evident, as out of 541 cases there were but 2 deaths. Some of the statistics, which are very carefully kept, may be of interest. The largest number of births occurred, as it is popularly believed they do, at night, 145 taking place between midnight and 6 A.M.; the numbers corresponding to the remaining three-quarters of the twenty-four hours being 131 from 6 A.M. to noon, 107 from noon to 6 P.M., and 144 from 6 P.M. to midnight. There were 14 abortions and 9 cases of twins; three births took place in the street. Of the remaining 501, 478 were vertex presentations, 15 breech, and 8 transverse. In 9 of the 14 cases of abortion the ovum was removed mechanically. When there was considerable hemorrhage and the os was not dilated, a hot vaginal injection of carbolized water was given, which was, as a rule, successful. Twice a plug, consisting of a long strip of cotton-wool moistened with glycerin and iodoform, was introduced by means of the speculum, as much as possible being inserted into the cervical canal, and subsequently, when the os was sufficiently patent, the finger was introduced and the uterine contents removed. In one case there was a slight amount of perimetritis, and in two a single rise of temperature. In one case a spatula was cautiously used to assist the irrigation, and once the contents were removed with the help of a sharp hook. Apart from cases of placenta prævia and abortion, there were 29 cases of hemorrhage, 6 of these occurring in primiparæ; 6 took place during the first and second stages of labor, the rest in the third stage and postpartum. The treatment adopted was, during the first stage, to plug, and when the os was sufficiently dilated to rupture the membranes. If there was rigidity of the os, narcotics were given. When uterine atony was the cause, massage, the application of ether to the abdomen, hot injections, and (after the birth of the placenta) ergot were resorted to. As to operations, episiotomy, or a double V-shaped incision of the perineum, was performed five times, no sutures being inserted afterwards. Twice the os uteri was incised; twice the prolapsed cord was replaced; perineal sutures were required in 20 cases. In the performance of the operation the most careful antiseptic precautions were taken; in 16 cases the union was complete. Retention of membranes required the introduction of the hand into the uterus once, but in 14 cases the placenta had to be artificially extracted, being completely adherent once, and partially so thirteen times. Labor was induced prematurely for contracted pelvis three times, twice by the injection of water at 28° R. (95° F.) through a tube passed into the cavity of the uterus, between the uterine wall and the fœtal membranes; in the third case it was induced by the introduction of an elastic sound into the uterus. Podalic version was performed eleven times, and the forceps applied fifteen times. Craniotomy was performed twice.—*Lancet*, May 7, 1887.

POSOLOGY AND USE OF SOME NEW REMEDIES.

Osmic acid: best administered in pill form (made up with Armenian bole). The dose is $\frac{1}{60}$ grain, which may be repeated several times a day. Used in epilepsy and sciatica. Agaricine: best administered in combination with Dover's powder. Dose, $\frac{1}{12}$ to $\frac{1}{6}$ grain. Used for night sweats. Aloin: from $\frac{1}{3}$ grain to $3\frac{1}{2}$ grains, in pill form. Antipyrin: dose, from 75 to 90 grains, divided into three portions, one of which is to be taken every hour. Bismuth salicylate: dose, from 5 to 7 grains, in pill form. In typhoid this dose may be doubled and repeated every hour up to ten or twelve times. Canabinone: from $\frac{2}{3}$ to $1\frac{1}{2}$

grains. Best administered mixed with finely-ground roasted coffee. Sedative and hypnotic. Colocynthin: used subcutaneously. The dose is from $\frac{1}{6}$ to $\frac{1}{2}$ grain. It may also be administered in pill form by the mouth, the requisite dose being from $\frac{1}{8}$ to 1 grain. Convallaramine: internally, in pill form. The dose is from $\frac{3}{4}$ to $1\frac{1}{4}$ grains. Euonymin: best given in pill form, combined with extract of belladonna or hyoscyamus. The dose is from 3 to 10 grains. Nitro-glycerin is best given in alcoholic solution. The dose is from $\frac{1}{150}$ to $\frac{1}{60}$ grain, repeated several times a day. Rossbach prefers ether as a solvent. His formula for its use is as follows: dissolve $1\frac{1}{2}$ grains of nitro-glycerin in sufficient ether, and add the solution to a mixture consisting of 2 ounces of powdered chocolate and 1 ounce of powdered gum arabic. Mix very thoroughly, and divide into two hundred pastilles. Each pastille will thus contain $\frac{1}{8133}$ grain of nitro-glycerin. Used in angina pectoris, and as a diuretic. Picrotoxine: in aqueous solution. Dose, from $\frac{1}{8}$ to $\frac{1}{6}$ grain. Used in epilepsy. Sulphate of thallin may be given dissolved in wine or water (with some corrigerant). The dose is from 4 to 8 grains, or 1 grain every hour. The above is taken in part from the *Rundschau Leitmeritz.*—*The Australasian Journal of Pharmacy*, April, 1887.

MOMORDICA BUCHA.

At a recent meeting of the Paris Biological Society, M. A. Duprat made a communication concerning the physiological effects of the *Momordica bucha*, a cucurbitaceous plant of Brazil. The fruit of this plant is prescribed in dropsy. It may be given in injections composed of the watery extract of the fruit, or as a draught prepared from the fruit, after it has been macerated in brandy at 25° C. (77° F.). The injection acts as a drastic purgative, giving rise to severe pain, while the draught causes vomiting. *Momordica bucha* is used only by quacks, and is generally considered dangerous in Brazil. M. Duprat has made experiments with the extract obtained by hydro-alcoholic maceration of the fruit, diluted with water. From these he concludes that *Momordica bucha* acts as a local irritant, causing vomiting and diarrhœa, according to the dose and the manner in which it is administered; it will cause death if taken in sufficiently large doses. The use of the drug by unqualified persons should be forbidden, but in the hands of medical men it may be very useful as a purgative.—*British Medical Journal*, May 28, 1887.

COVERING WOUNDS WITH PLASTER.

At an inquest held in the Southwark Coroner's Court last Friday a point was brought out which is of some importance as bearing on the treatment of recent wounds. A schoolboy running out of the school-gates fell and cut his forehead. The wound was strapped with plaster, and everything appears to have gone well for four days. Then shivering came on, and was followed by drowsiness deepening into insensibility, and death resulted two days later. After a post-mortem examination, it was decided that the fatal issue was due to blood-poisoning brought on by neglecting to cleanse and dress the wound, the plaster never having been removed from the time of its application. In commenting on cases of this kind one naturally allows somewhat for the possible effects of shock occasioned by the primary injury, which, without amounting to any gross lesion, might yet materially influence the final result. Be this as it may, however, enough has been shown in evidence to enable the coroner to assign to the death in question a more direct connection with the wound itself. The practice of plastering over recent cuts is very usual; it is also one which in numerous instances has proved injurious. Apart from any question of blood-poisoning, indeed, the mere tension of retained discharges is an inevitable source of mischief where this custom is adhered to. The simple rule in surgery which provides for the free escape of pus where such is likely to form is one of which we need not remind any qualified practitioner. Accidents due to neglect of this rule are chiefly liable to occur when a wound has been treated either by the injured person himself or by a practising chemist. In such cases plaster is the first resource, and is apt to be used rather well than wisely.—*The Lancet*, June 4, 1887.

RICINUS COMMUNIS.

Mr. Thomas Dixson draws the following conclusion from a paper with the above title published in the *Australasian Medical Gazette* for March and April, 1887:

1. That the castor oil contains only a gentle aperient, while the castor seeds contain a violent, irritant one.

2. That the seeds should never be used as

is done in some countries by the "herbalist," as aperients, *deaths in great agony having been so caused.*

3. That in castor oil the aperient substance seems to be an oil or resin, and is certainly not the same body which we find in the seeds, after the oil has been extracted, as stated wrongly in text-books.

4. Nauseous material can get into the oil through it being heated, or through it being expressed from the *unshelled* seeds; for the unshelled seeds yield, to alcohol or ether, a brown substance of *ill smell* and acrid taste, but *not aperient.*

5. That if the seeds were shelled before the oil were pressed out cold, an almost tasteless oil is got, while the cake left behind would, if *cooked*, form an albuminous, pleasant article of food, especially of use in India, where *thousands of tons* of the cake are made yearly in a crude way. In *famine*, this would be a *valuable adjunct* to rice, seeing that meat is not eaten by Hindoos.

6. That the active principle is probably the very glycoside found in the seed, which, through a slight change in chemical composition (hydration perhaps), loses its activity (*cf.* convolvulin, which readily changes when heated in presence of alkalies to the inert convolvulinic acid).

The leaves of the castor plant have been long used locally for encouraging lactation. Mr. Dixson was unable to obtain any traces of an active principle, either aperient or otherwise, from the fresh leaves; possibly the benefit may be due to their being large, soft, and pliable, and so suitable for covering the surface well and closely, and encouraging local warmth as non-conductors.

THE LATEST CURE FOR CONSUMPTION.

The recent observations of Dr. Kolischer upon a new method of treating tuberculous disease of joints, which were described by our Vienna correspondent last week, appear to have excited considerable attention. The method, based on the fact that tubercle deposits do sometimes undergo spontaneous "cure" by calcification and fibroid changes, was an endeavor to excite such retrogressive change artificially. The results obtained in the few cases at present thoroughly treated were certainly striking, and were declared by Professor Albert to surpass any other plan of treatment yet in vogue. It is now said that Dr. Kolischer contemplates applying the same method to the treatment of visceral tubercle, and once more the world is agitated by the alleged discovery of a "cure for consumption." We would counsel a little patience before accepting even the possibility of being able to artificially arrest the progress of pulmonary phthisis by the administration of acid phosphate of lime or any other salt. At the same time, we would by no means discountenance a fair trial of any plan which, as in this case, is based on rational grounds. Perhaps between the varied efforts to discover germicidal agents on the one hand, and drugs to render the tubercular neoplasm obsolete on the other, we may one day arrive at some panacea. There is not much, however, in the recent history of the treatment of phthisis to render us very sanguine of such a result being attained.—*The Lancet*, June 4, 1887.

THE EFFECTS OF RESORCIN.

From his experience as detailed in the *Journal of Cutaneous and Genito-Urinary Diseases* for June and July, 1887, Dr. G. T. Jackson draws the following conclusions:

Resorcin is an irritating substance for use in eczema, though at times it may prove very efficient in chronic cases where active stimulation is indicated. It exerts a powerful absorptive effect on new cell-infiltrations. It is a useful addition to our list of remedies for the treatment of epitheliomatous lesions where surgical procedures are contraindicated from any cause.

ASTHMA TREATED BY BERGEON'S METHOD.

Dr. S. Solis-Cohen related before the Philadelphia County Medical Society, May 11, 1887 (*Weekly Medical Review*, May 28, 1887), that he had succeeded in giving immediate relief in a case of asthma through the injection into the intestines of a mixture of carbonic acid and hydrogen sulphide as recommended by Bergeon.

SYRUP OF SACCHARIN.

Pollatschelk gives a formula in *Rundschau* (Prag) for making syrup of saccharin. The syrup is used in sweetening medicines for patients suffering from diabetes. Dissolve 10 parts of saccharin and 11 parts of carbonate or 12 parts of bicarbonate of sodium in 1000 parts distilled water at a temperature of 40° C.—*National Druggist*, June 17, 1887.

XEROX